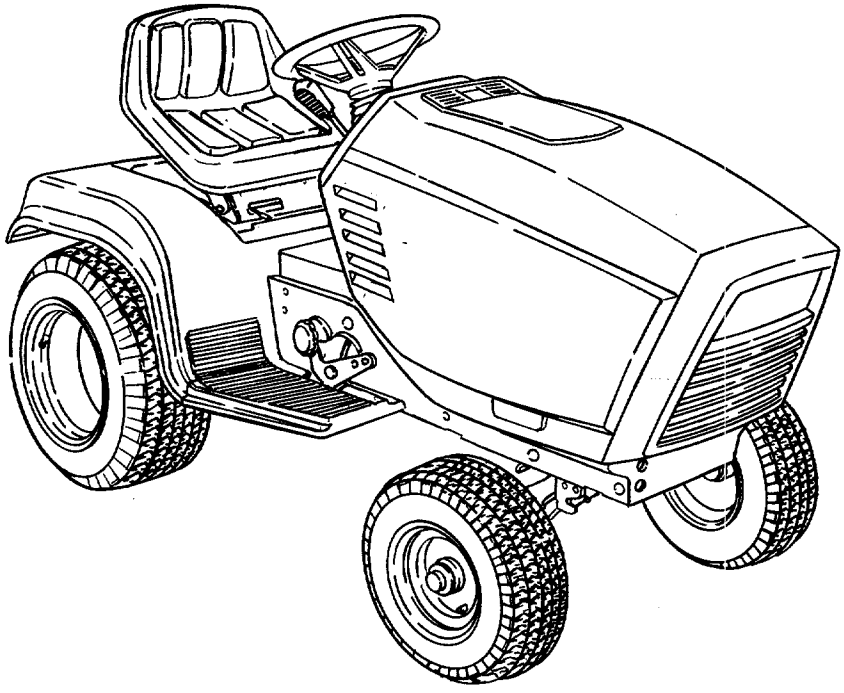
Cub Cadet®

Power Equipment

Owner's Manual

GARDEN TRACTOR



Model Number
1541
Important:
Read Safety Rules and Instructions Carefully

Thank you for purchasing an American-built product

CUB CADET CORPORATION • P.O. BOX 360930 • CLEVELAND, OHIO 44136

PRINTED IN U.S.A.

FORM NO. 772-4103

Cub Cadet
Power Equipment

LIMITED WARRANTY

Proper maintenance of your Cub Cadet equipment is the owner's responsibility. Follow the instructions in your owner's manual for correct lubricants and maintenance schedule. Your Cub Cadet dealer carries a complete line of quality lubricants and filters for your equipments engine, transmission, chassis and attachments.

RIDING MOWERS, LAWN TRACTORS, GARDEN TRACTORS, CUB CADET ATTACHMENTS AND HOME MAINTENANCE PRODUCTS.

FIRST YEAR

This limited warranty for residential and commercial users, covers any defect in material or workmanship in your Cub Cadet equipment for one year from the date of purchase for the first user purchaser.

Batteries have a one year prorated limited warranty with 100% replacement during the first three months.

We will replace or repair any part or parts without charge through your authorized Cub Cadet dealer.

SECOND YEAR

This limited warranty, for residential users only, covers any defects in material or workmanship in the drive train for two years from the date of purchase for the first user purchaser.

The drive train consists of the engine, engine cradle, drive shaft, drive shaft clutch, all parts enclosed by the transmission housing, rear axle housing, brakes and electric power take off (if so equipped). V-belts used for either the traction drive or any attachments are covered for one year only.

ITEMS NOT COVERED

The warranty does not cover routine maintenance items such as lubricants, filters (oil, fuel, air and hydraulic), cleaning, tuneups, brake and/or clutch inspection, adjustments made as part of normal maintenance, blade sharpening, set-up, abuse, accidents and normal wear. It does not cover incidental costs such as transporting your equipment to and from the dealer, telephone charges or renting a product temporarily to replace a warranted product.

There is no other express warranty.

HOW TO OBTAIN SERVICE

Contact your authorized Cub Cadet servicing dealer who sold you your Cub Cadet equipment. If this dealer is not available see the Consumer Yellow Pages under "lawn mowers" for the name of a dealer near you.

If you need further assistance in finding an authorized Cub Cadet servicing dealer, write or telephone:

Cub Cadet Corporation
Post Office Box 360930
Cleveland, Ohio 44136
Attn: Customer Service

Telephone: (216) 273-4550

HOW DOES STATE LAW APPLY?

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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Instructions given with this symbol are for personal safety. Be sure to follow them.

WARNING

This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester muffler is available at your nearest engine authorized service center.

IMPORTANT

RULES FOR SAFE OPERATION

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL – **HEED ITS WARNING.**

WARNING

Your unit was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.

1. READ THIS OWNER'S MANUAL carefully in its entirety before attempting to assemble or operate this unit. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. This unit is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times.
3. Know the controls and how to stop the machine quickly.

4. Do not allow children to operate vehicle. Do not allow adults to operate it without proper instruction. Only persons well acquainted with these rules of safe operation should be allowed to use your mower.

5. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts to avoid entanglement in the moving parts. Never operate a unit in bare feet, sandals, or sneakers.

6. To prevent injury, do not carry passengers or give rides. Keep children, pets and bystanders out of the area while mowing. Only the operator should ride on the unit and he/she should ride only in the seat.

7. Check overhead clearance carefully before driving under power lines, guy wires, bridges or low hanging tree branches; before entering or leaving buildings, or in any other situation where the operator may be struck or pulled from the unit, which could result in serious injury.

8. To maintain control of the unit and reduce the possibility of upset or collision, operate the tractor smoothly. Avoid erratic operation and excessive speed.

9. Keep the area of operation clear of all persons, particularly small children and pets. Stop engine when they are in the vicinity of your mower. Although the area of operation should be completely cleared of foreign objects, a small object may have been overlooked and could be accidentally thrown by the mower in any direction and cause injury to you or a bystander.

10. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.

11. Stop the blade(s) when crossing gravel drives, walks or roads.

12. Disengage all attachment clutches and shift into neutral before attempting to start engine.

13. Before leaving the operator's position, disengage blades, place shift lever in neutral, engage parking brake, shut engine off and remove key.

14. Do not put hands or feet near or under rotating parts. Stay clear of the discharge opening at all times as the rotating blade(s) can cause injury.

15. Disengage power to attachment(s) and stop engine before making any repairs or adjustments. Disconnect the spark plug wire(s) and keep the wire(s) away from the plug(s) to prevent accidental starting.

16. Before attempting to unclog the mower or discharge chute, stop the engine. The mower blade(s) may continue to rotate for a few seconds after the engine is shut off. Therefore, be sure the blade(s) have stopped completely. Disconnect the spark plug wire(s) and keep the wire(s) away from the plug(s) to prevent accidental starting.

17. Disengage power to attachment(s) when transporting or not in use.

18. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.

19. Do not stop or start suddenly when going uphill or downhill. Mow up and down face of steep slopes; never across the face. Use extreme caution if it is necessary to drive the tractor up an incline or back the tractor down an incline because the front of the tractor could lift and rapidly flip over backward which could cause serious injury.

20. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Always keep the tractor in low gear when going down steep hills to take advantage of engine braking action. Choose a low enough gear so that you will not have to stop or shift while on the slope.

21. Stay alert for holes in terrain and other hidden hazards which may cause the unit to tip over.

22. Use care when pulling loads or using heavy equipment.
    A. Use only approved drawbar hitch points.
    B. Limit loads to those you can safely control.
    C. Do not turn sharply. Use care when backing.
    D. Use counterweight(s) or wheel weights when suggested in owner's manual.

23. Watch out for traffic when crossing or near roadways.

24. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near vehicle while in operation.

25. Handle fuel with care. It is highly flammable.
    A. Use approved fuel container.
    B. Never remove cap or add fuel to a running or hot engine or fill fuel tank indoors. Wipe up spilled fuel. Always use original type vented cap.

C. Open doors if engine is run in garage. Exhaust fumes are dangerous. Do not run engine indoors.

26. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present, such as hot water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.

27. To reduce fire hazard, keep engine and cutting deck free of grass, leaves or excessive grease.

28. Keep the vehicle and attachments in good operating condition, and keep safety devices in place. Use guards as instructed in operator's manual.

29. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.

30. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object. The damage should be repaired before restarting and operating the equipment.

31. Do not change the engine governor settings or overspeed the engine.

32. When using the vehicle with mower, proceed as follows:

A. Mow only in daylight or in good artificial light.

B. Never make a cutting height adjustment while engine is running if operator must dismount to do so.

C. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher.

D. Check blade mounting bolts for proper tightness at frequent intervals.

33. Check grass catcher bags frequently for wear or deterioration. For safety protection, replace only with new bag meeting original equipment specifications.

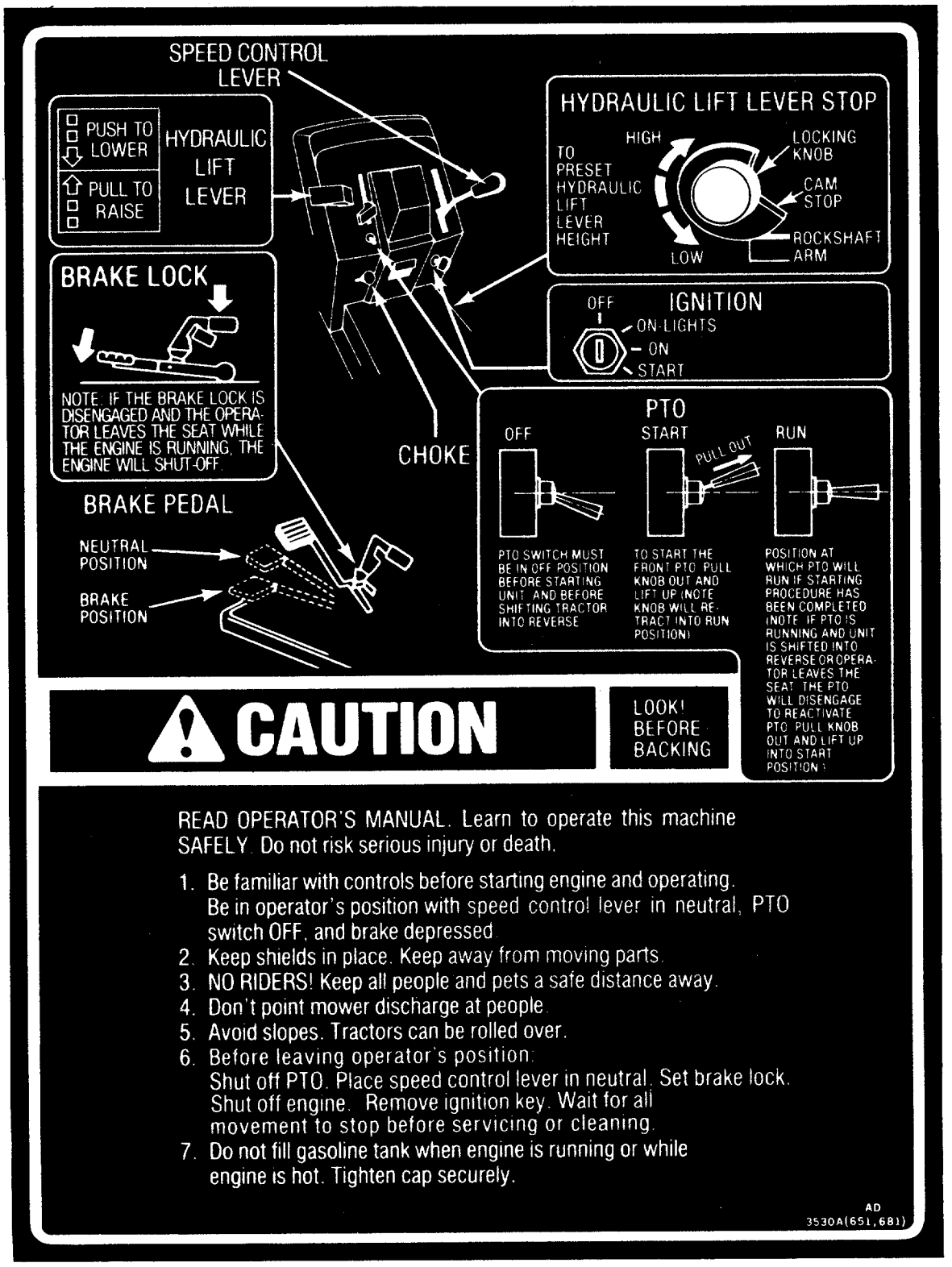
34. Look behind to make sure the area is clear before placing the transmission in reverse and continue looking behind while backing up. Disengage blades before shifting into reverse and backing up.

35. This unit should not be driven up a ramp onto a trailer or truck under power, because the unit could tip over, causing serious personal injury. The unit must be pushed manually to load properly.

36. Check brake operation frequently. Adjust and service according to brake adjustment instructions in this manual.

PRODUCT GRAPHICS

Keep safety product graphics (decals) clean. Replace any safety graphic that is damaged, destroyed, missing, painted over or can no longer be read. Replacement safety graphics are available through your dealer.


SPEED CONTROL LEVER
PUSH TO LOWER
HYDRAULIC LIFT LEVER
PULL TO RAISE
HYDRAULIC LIFT LEVER STOP
HIGH
TO PRESET HYDRAULIC LIFT LEVER HEIGHT
LOW
LOCKING KNOB
CAM STOP
ROCKSHAFT ARM
BRAKE LOCK
NOTE: IF THE BRAKE LOCK IS DISENGAGED AND THE OPERATOR LEAVES THE SEAT WHILE THE ENGINE IS RUNNING, THE ENGINE WILL SHUT-OFF.
IGNITION
OFF
ON-LIGHTS
ON
START
CHOKE
PTO
OFF
START
PULL OUT
RUN
PTO SWITCH MUST BE IN OFF POSITION BEFORE STARTING UNIT AND BEFORE SHIFTING TRACTOR INTO REVERSE
TO START THE FRONT PTO PULL KNOB OUT AND LIFT UP (NOTE KNOB WILL RETRACT INTO RUN POSITION)
POSITION AT WHICH PTO WILL RUN IF STARTING PROCEDURE HAS BEEN COMPLETED (NOTE IF PTO IS RUNNING AND UNIT IS SHIFTED INTO REVERSE OR OPERATOR LEAVES THE SEAT THE PTO WILL DISENGAGE TO REACTIVATE PTO PULL KNOB OUT AND LIFT UP INTO START POSITION)
BRAKE PEDAL
NEUTRAL POSITION
BRAKE POSITION
CAUTION
LOOK! BEFORE BACKING
READ OPERATOR'S MANUAL. Learn to operate this machine SAFELY. Do not risk serious injury or death.
1. Be familiar with controls before starting engine and operating. Be in operator's position with speed control lever in neutral, PTO switch OFF, and brake depressed.
2. Keep shields in place. Keep away from moving parts.
3. NO RIDERS! Keep all people and pets a safe distance away.
4. Don't point mower discharge at people.
5. Avoid slopes. Tractors can be rolled over.
6. Before leaving operator's position: Shut off PTO. Place speed control lever in neutral. Set brake lock. Shut off engine. Remove ignition key. Wait for all movement to stop before servicing or cleaning.
7. Do not fill gasoline tank when engine is running or while engine is hot. Tighten cap securely.
AD 3530A(651,681)

GENERAL SAFETY INSTRUCTIONS CAUTION – LOCATED ON THE FRAME COVER

TO THE OWNER

Assembled in this manual are operation, lubrication, and maintenance instructions for the *Cub Cadet* 1541 Tractor. The material has been prepared in detail to help you better understand the correct care and efficient operation of your tractor. Before you operate the tractor, study this manual carefully. Additional copies may be ordered from your dealer at a nominal price.

Your local authorized dealer is interested in the performance you receive from your tractor. He has factory-trained servicemen, informed in the latest method of servicing tractors, modern tools, and original-equipment service parts which assure proper fit and good performance.

CAUTION

DO NOT TOW Tractor. Towing or pushing the tractor for more than a few feet may damage the hydrostatic drive unit.

The *Cub Cadet* 1541 Tractor has a hydrostatic drive unit and will require minimum service if recommended operation and maintenance procedures are followed.

To obtain top performance and assure economical operation the tractor should be inspected, depending on its use, periodically, or at least once a year, by your authorized dealer.

When in need of parts, always specify the model, chassis, and engine serial numbers, including the prefix and suffix letters. Write these serial numbers in the space provided on this page.

Should you have difficulties with the unit, consult your authorized dealer. UNDER NO CIRCUMSTANCES SHOULD YOU ATTEMPT TO SERVICE THESE UNITS YOURSELF. Only your dealer is authorized to repair or replace units on this drive under the terms of the warranty. Should you desire additional information not found in this manual, contact your authorized *Cub Cadet* dealer.

SERIAL NUMBER LOCATION

NOTE

LEFT and RIGHT indicate the left and right sides of the tractor when facing forward in the driver's seat. Reference to FRONT indicates grille end of the tractor; to REAR the drawbar end.

Chassis serial number plate is located near left rear fender. (See Figure 1.)

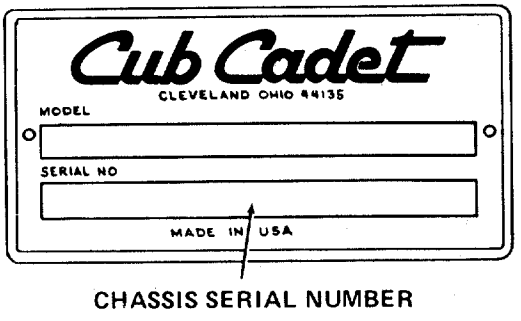


Figure 1

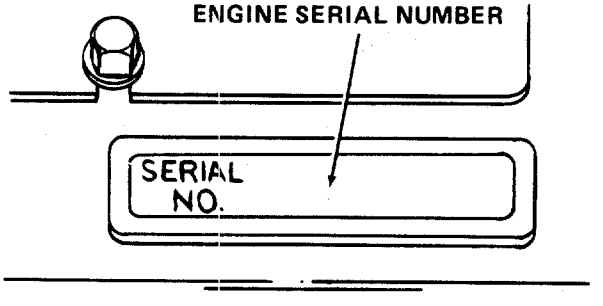


Figure 2

MODEL _____

DELIVERY DATE _____

SECTION I. CONTROLS

Your *Cub Cadet* Tractor has been safety engineered. Thoroughly acquaint yourself with all the instruments and controls before attempting to start or operate the tractor.

A. Low Oil Indicator
B. Low Fuel Indicator
C. Amp Indicator
D. Hour Meter
E. Reverse "R" Indicator
F. Disengage PTO Indicator
G. Depress Left Pedal Indicator
H. Speed Control Lever
I. Lift Height Indicator
J. Cam Lock Knob
K. Ignition/Light Switch
L. Tilt Wheel Release Lever
M. Choke Control
N. Seat Adjustment Lever (Not Shown)
O. Brake Lock
P. Brake Pedal
Q. Hydraulic Lift Control Lever
R. Throttle Control Lever
S. Front Power Take-Off (PTO) Control Switch
T. Hydrostatic Relief Valve Lever
U. Fuse (Not Shown)
V. Safety Interlock Switches (Not Shown)

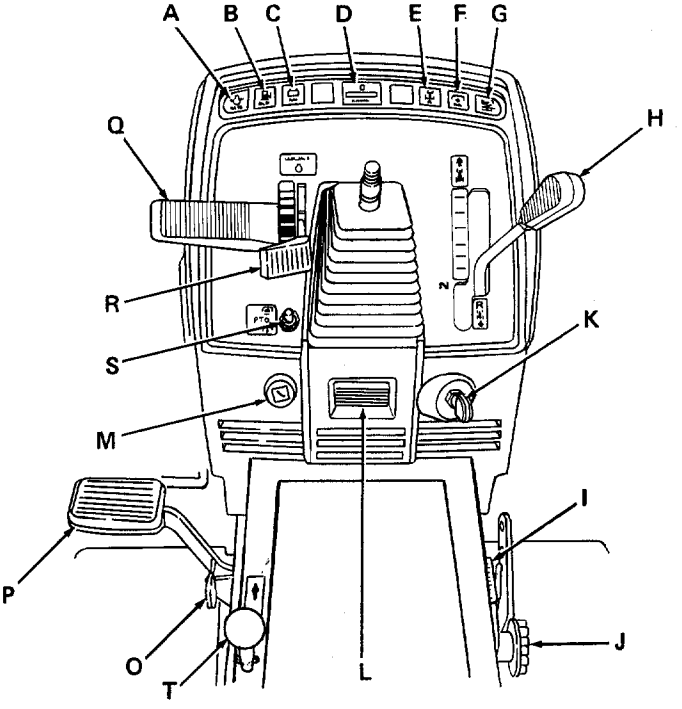


Figure 3

A. LOW OIL INDICATOR

This indicator will illuminate when the oil level is low.

CAUTION

When "LOW OIL" indicator illuminates, stop the tractor and check the oil level. Continuing to operate the tractor could result in severe damage to the engine.

B. LOW FUEL INDICATOR

This indicator will illuminate when the fuel level in the fuel tank is low.

C. AMP INDICATOR

This indicator will illuminate when a problem exists with the charging system or the battery. If this indicator illuminates, stop the tractor and contact your *Cub Cadet* Dealer.

D. HOUR METER

The hour meter indicates the actual hours of engine operation. This enables the operator to determine when lubrication, change of oil or periodic inspections are necessary. It also provides a means of computing cost of specific jobs. The hour meter operates whenever the engine is running or the ignition key is in the "ON" position.

E. REVERSE "R" INDICATOR

This indicator is illuminated when the tractor is in reverse. The reverse "R" indicator must be off before the tractor can be started.

F. DISENGAGE PTO INDICATOR

This indicator will illuminate if an attempt is made to start the tractor with the PTO switch engaged. This indicator must be off before the tractor can be started. When starting the tractor, this indicator will briefly flash.

G. DEPRESS LEFT PEDAL INDICATOR

This indicator will illuminate when an attempt is made to start the tractor with the brake pedal not fully depressed.

H. SPEED CONTROL LEVER

NOTE

Do not rest your foot on the brake pedal while driving the tractor as this would cause the speed control lever to return to the "N" position.

The lever is used to select any speed from a standstill "N" position to eight miles per hour in the forward direction and four miles per hour in the reverse direction.

Moving the speed control lever forward provides increased forward speed, and moving the lever rearward provides the reverse speeds. (See Figure 3.)

I. LIFT HEIGHT INDICATOR

The lift height indicator will indicate the height of deck attachment when installed. (See Figure 4).

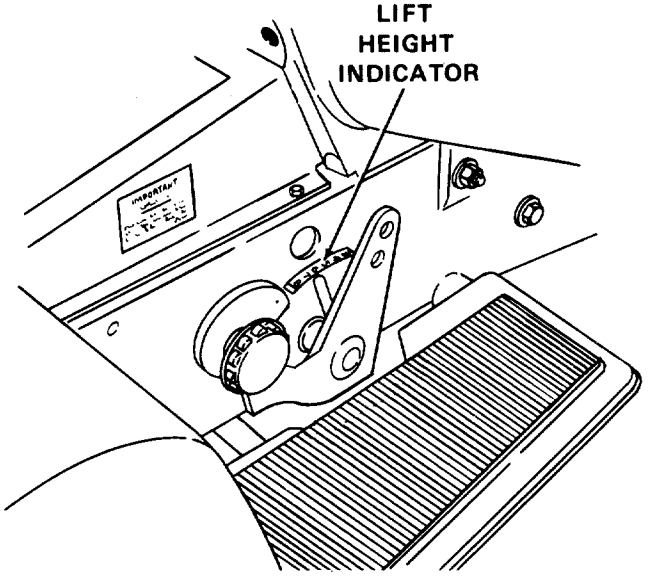


Figure 4

J. CAM LOCK KNOB

The cam lock knob is used to adjust the cam stop which will allow an attached implement to return to a single preset height. (See Figure 5.)

With the implement at a desired height, release cam stop by turning locking knob counterclockwise. Turn cam stop until it contacts tang on rockshaft. Lock cam stop into this position by turning cam knob clockwise.

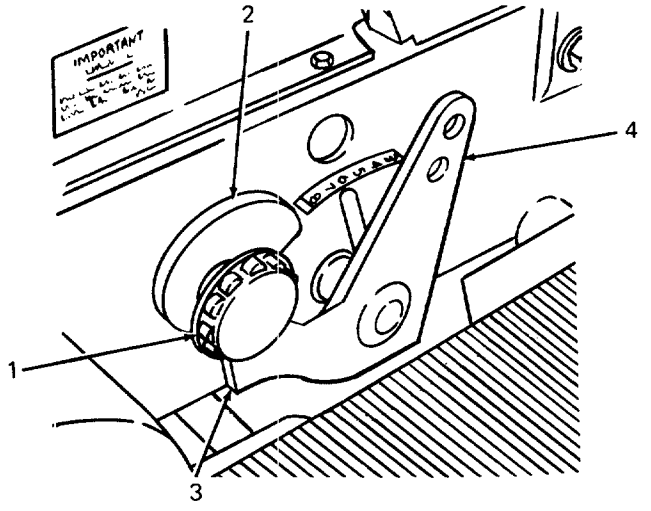


Figure 5

1. **Locking Knob**
2. **Cam Stop**
3. **Tang**
4. **Rockshaft**

Equipment is normally operated in a "Float" position (implement free to move upward).

To operate equipment in a fixed "Locked" position, where down pressure of the implement is required (blade work), remove frame cover and install bolt, 1/2 x 1-1/8 inch (not furnished with tractor), between the lift arm and lift bracket. (See Figure 6.)

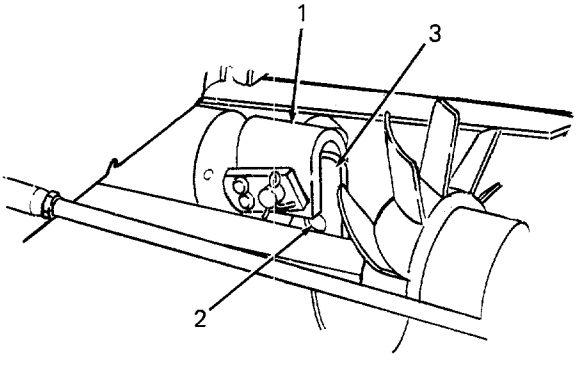


Figure 6

1. **Lift Bracket**
2. **Hole for Bolt**
3. **Lift Arm**

K. IGNITION/LIGHT SWITCH

WARNING

Remove the key from the tractor when the tractor is not in use to prevent accidental starting and battery discharge.

The combination lights and ignition switch is a four-position switch. (See Figure 7.)

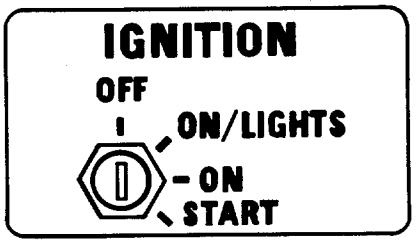


Figure 7

L. TILT WHEEL RELEASE LEVER

The tilt wheel release lever is used to adjust the steering wheel forward away from the operator or rearward towards the operator. Refer to **ADJUSTING THE STEERING WHEEL** in Section III.

M. CHOKE CONTROL

The choke control is operated manually. Pull knob out to choke engine. Push knob in to open choke. (See Figure 3.)

N. SEAT ADJUSTMENT LEVER

The seat adjustment lever is used to move the seat forward or rearward. Refer to **ADJUSTING THE SEAT** in Section III.

O. BRAKE LOCK

WARNING

The hydrostatic transmission will not hold the tractor on a hill. In a short period of time (depending on the steepness of the hill) the oil will drain from the transmission and allow the tractor to roll downhill. To avoid an accident and/or possible injury, engage the brake lock.

Always engage the brake lock when dismounting the tractor. To lock the brake, depress brake pedal and place the brake lock in the engaged position. (See Figure 8.) To disengage the lock, press down on the pedal, lift the lock up and place it in the disengaged position.

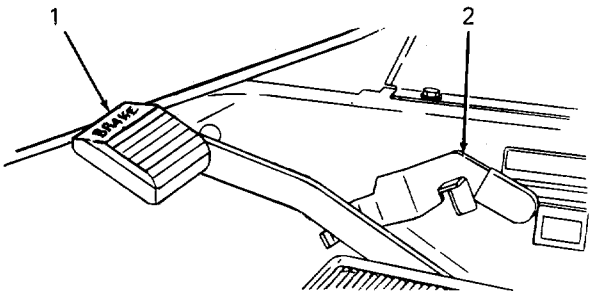


Figure 8

1. **Brake Pedal**
2. **Brake Lock**

P. BRAKE PEDAL

NOTE

Do not rest your foot on the brake pedal while driving the tractor as this would cause the speed control lever to return to the "N" position.

Brake pedal must be pressed all the way down to activate the safety starting switch. When brake pedal is in the depressed position, it automatically moves the speed control lever to the "N" position if the linkage is properly adjusted. (See Figure 3.)

Q. HYDRAULIC LIFT CONTROL LEVER

NOTE

The engine must be running in order to operate the hydraulic lift.

The hydraulic lift control lever controls the raising and lowering of equipment used with the tractor, if installed. The control lever is spring-loaded. To raise the equipment, pull up the lever. To lower the equipment, push down on the lever. (See Figure 9.)

R. THROTTLE CONTROL LEVER

This lever controls the speed of the engine. When set in a given position, it will maintain a uniform engine speed. (See Figure 9.)

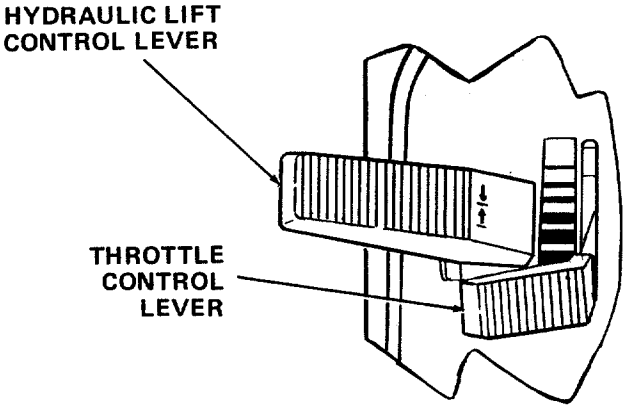


Figure 9

NOTE

When using power take-off operated equipment, best performance is achieved with the throttle lever in the "FAST" position.

This symbol shows slow position.

This symbol shows fast position.

S. FRONT POWER TAKE-OFF (PTO) CONTROL SWITCH

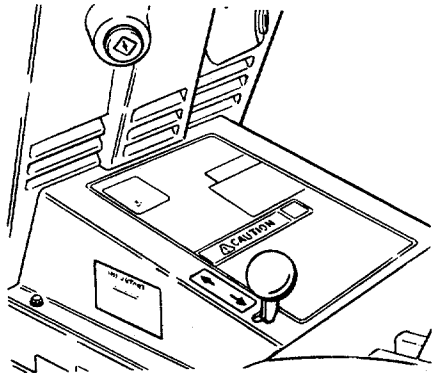
The power take-off (PTO) control switch, which is located on the left side of the instrument panel (see Figure 3), operates an electric clutch. This electric clutch controls the engagement ("RUN") or disengagement ("OFF") of the front PTO.

T. HYDROSTATIC RELIEF VALVE LEVER

The hydrostatic relief valve lever is located on the frame cover.

The relief valve disconnects the transmission from the pump so the unit can be pushed a short distance by hand without running.

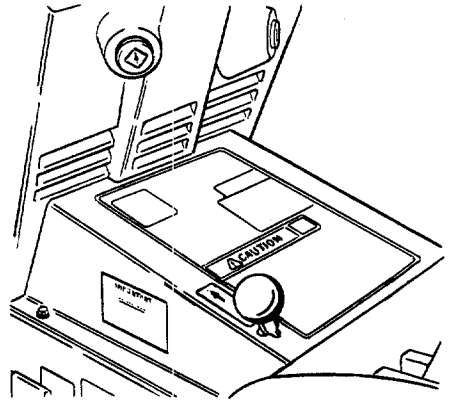
1. To engage the relief valve (making the tractor free-wheeling), pull the lever up and back. (See Figure 10.)



ENGAGE POSITION

Figure 10

2. To disengage the relief valve, release the lever by pushing it forward. (See Figure 11.)



DISENGAGE POSITION

Figure 11

U. FUSE

The fuse is located under the hood on the left side of the engine compartment. It is installed to protect the tractor's electrical circuitry and components from damage caused by excessive amperage overload. (See Figure 12.)

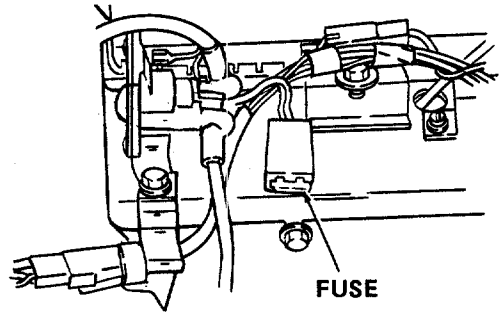


Figure 12

V. SAFETY INTERLOCK SWITCHES

This tractor is equipped with a safety interlock system for the protection of the operator. If the interlock system should every malfunction, do not operate the tractor. Contact your authorized *Cub Cadet* Dealer.

The safety interlock system prevents the engine from cranking or starting unless the brake pedal is fully depressed, and the PTO switch is in the "OFF" position.

The safety interlock system will automatically shut off the engine if the operator leaves the seat before engaging the brake lock.

The safety interlock system will automatically disengage the PTO if the operator leaves the seat with the PTO in the "RUN" position, or the unit is shifted into reverse with the PTO in the "RUN" position. To reengage the PTO, shift into neutral ("N"), move the PTO switch into the "OFF" position and then engage the PTO while seated.

FUEL TANK

The fuel tank is located in the rear of the tractor. The fuel tank filler cap is located on the left rear fender. The main fuel shut-off valves are located on the bottom (left and right sides) of the tank. These valves control the flow of fuel to the engine. To open the valves turn the knobs counterclockwise until they stop. To close the valves, turn the knobs clockwise until they are tight. (See Figure 13.)

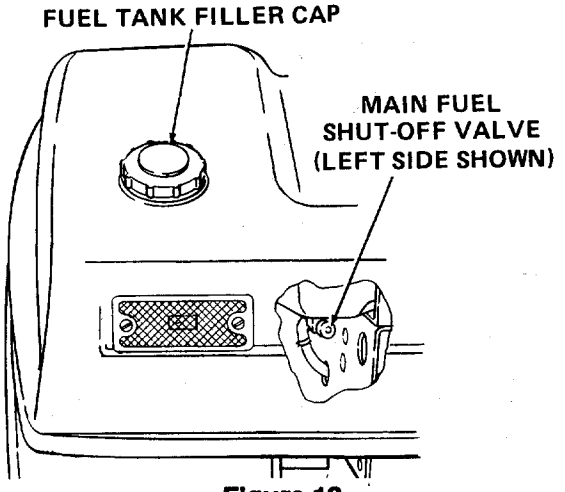


Figure 13

HOOD AND SIDE PANELS

The tractor hood is arranged to swing up and forward for easy access to the engine compartment. (See Figure 14.) Whenever engine maintenance is required, the side panels can be removed.

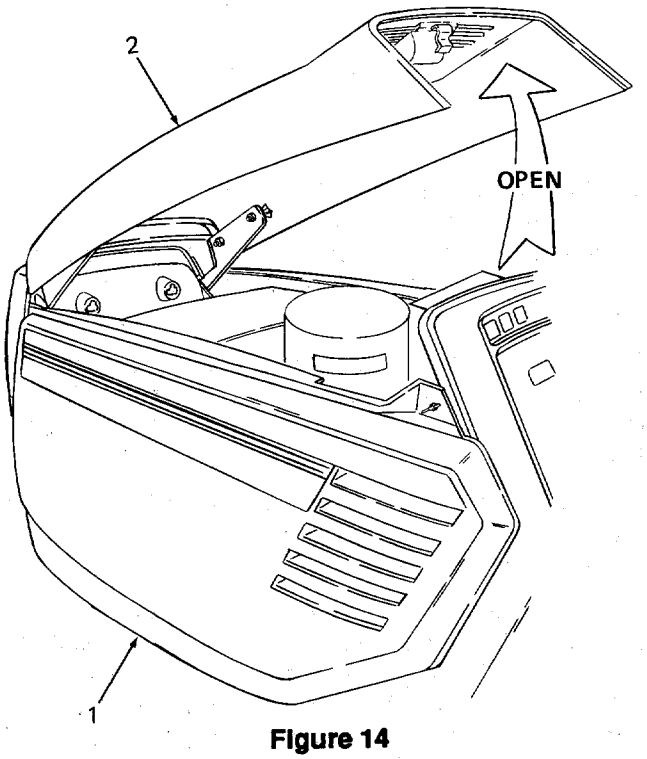


Figure 14

1. **Side Panel (One On Each Side)**
2. **Hood**

WARNING

If engine is hot, use caution not to burn yourself when removing the side panels.

To remove either right or left side panel, proceed as follows: Engage the brake lock. Raise the hood. Refer to Figure 15 and at rear of side panel remove wing nut and flat washer.

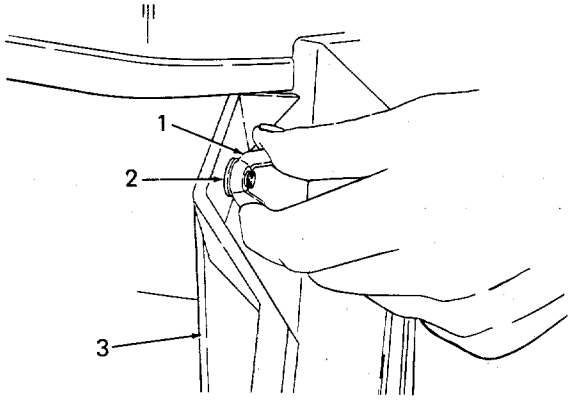


Figure 15

1. Wing Nut
2. Flat Washer
3. Side Panel

Remove front snaps by applying pressure to side of grille and gently pulling on side panel until snaps pop out of grille side flange. (See Figure 16.)

NOTE

Be sure both top and bottom snaps have popped out.

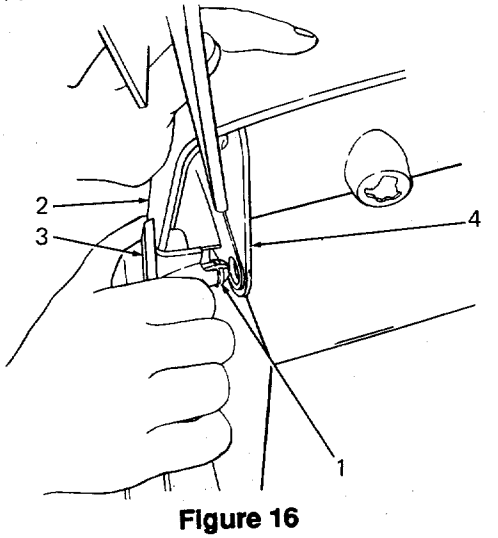


Figure 16

1. **Snap**
2. **Grille**
3. **Side Panel**
4. **Grille Side Flange**

See Figure 17 and locate lock tab and dash panel lock.

To remove lock tab, (A) gently pull front of side panel towards you and (B) pull up. Then (C) slide side panel forward to disengage dash panel lock. (Refer to Figure 18.)

Installation of either side panel is exactly the reverse of removal. After inserting snaps at front of panel into grille side flange holes, make sure upper front corner of side panel is inside of lip on grille as shown in Figure 19.

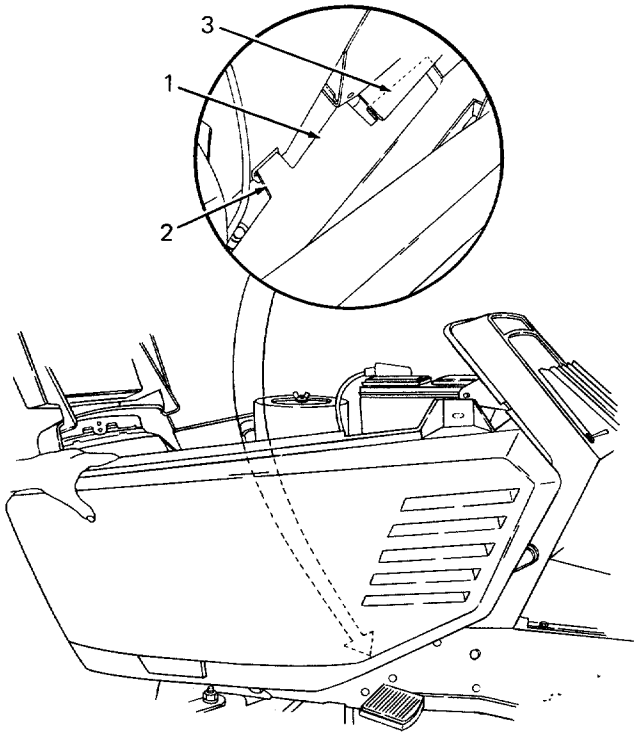


Figure 17

1. **Side Panel**
2. **Lock Tab**
3. **Dash Panel Lock**

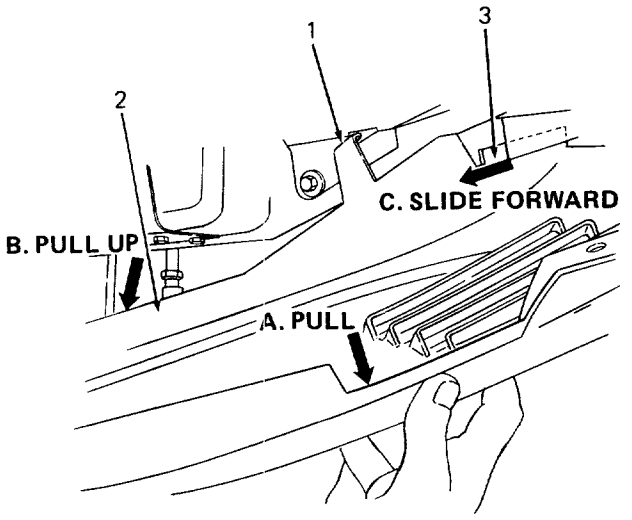


Figure 18

1. **Lock Tab**
2. **Side Panel**
3. **Dash Panel Lock**

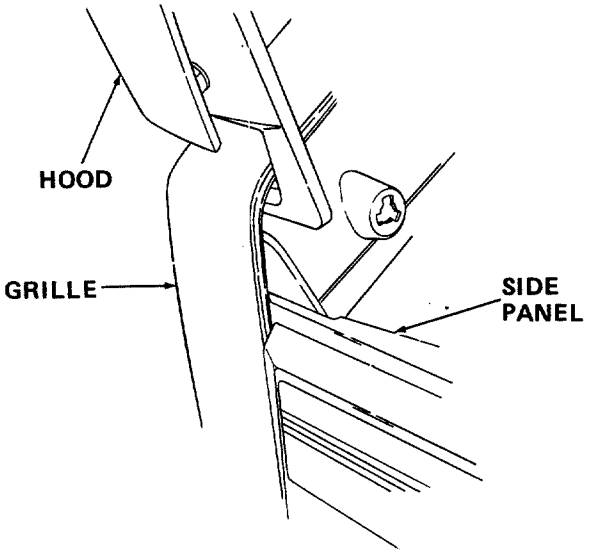


Figure 19

SECTION II. OPERATION

WARNING

RECEIVE INSTRUCTION - Read operator's manual. Learn to operate this machine SAFELY. Don't risk INJURY or DEATH.

1. Before starting engine or operation: Be familiar with controls. Be in operator's position with speed control lever in neutral, PTO turned off and brake depressed.
2. Keep shields in place. Keep away from moving parts.
3. NO RIDERS! Keep all people and pets a safe distance away. Look before backing up.
4. Don't point mower discharge at people.
5. Avoid slopes. Tractors can be rolled over.
6. Before leaving operator's position: Shut off PTO. Place speed control lever in neutral. Engage brake lock. Shut off engine. Remove ignition key. Wait for all movement to stop before servicing or cleaning.
7. Do not fill gasoline tank when engine is running or while engine is hot. Tighten cap securely.

BEFORE OPERATING YOUR TRACTOR

1. Before you operate the tractor study this manual carefully. It has been prepared to help you operate and maintain your tractor with utmost efficiency.
2. Familiarize yourself with the operation of all the instruments and controls.
3. Fill the tank with either lead-free, low-lead or regular gasoline. Make sure before you fill the tank that the gasoline is clean and fresh.
4. Check the engine and transmission oil levels.
5. Clean the air cleaner element if necessary.
6. Check the tire inflation pressures.
7. Adjust the seat and steering wheel for operator's maximum comfort, visibility and complete control of the tractor.
8. Remove the side panels and clean any accumulated grass and debris from the intake fan on engine.
9. Make certain that the backside of the grille insert is clean and unobstructed. Push down on the top of the grille insert and pull forward as shown in Figure 20. Lift the grille insert up removing the tabs from the bottom of the grille housing. Remove by hand any accumulated grass and debris.
10. Refer to various sections of the Owner's Manual for additional information.

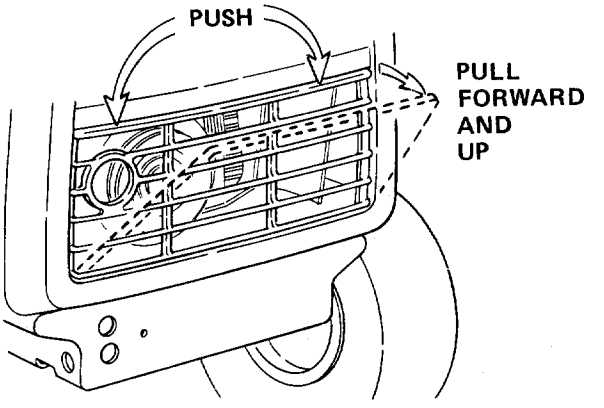


Figure 20

STARTING THE ENGINE

WARNING

Do not operate tractor if the interlock system is malfunctioning. It is a safety device designed for protection of the operator.

WARNING

Operator must be seated before starting the tractor.

NOTE

This tractor is equipped with a safety interlock system for the protection of the operator.

The safety interlock system prevents the engine from cranking or starting unless the

brake pedal is fully depressed, and the PTO engagement switch is in the "OFF" position.

The safety interlock system will automatically shut off the engine if the operator leaves the seat before engaging the brake lock.

NOTE

The safety interlock system will automatically disengage the PTO if the operator leaves the seat with the PTO in the "RUN" position, or the unit is shifted into reverse with the PTO in the "RUN" position. To reengage the PTO, shift into neutral ("N"), move the PTO switch into the "OFF" position and then engage the PTO while seated.

1. Operator must be seated.
2. Pull choke control knob to full choke position. Less choking may be necessary due to variations in temperature, grade of fuel, etc. Little or no choking will be needed when the engine is warm.
3. Place the throttle midway between the "SLOW" and "FAST" position.
4. Place the PTO switch in the "OFF" position.
5. Place the speed control lever in neutral ("N").
6. Fully depress the brake pedal.

NOTE

The speed control lever will automatically return to neutral when the brake pedal is pressed all the way down, and the linkage is properly adjusted.

7. Turn the ignition key clockwise to the "START" position and release it as soon as the engine starts; however do not operate the starter for more than 10 seconds at any one time. If the engine does not start within this time, turn the key "OFF" and wait a few minutes, then try again.

8. After the engine starts, slowly release the brake pedal and gradually push the choke control knob all the way in. Do not use the choke to enrich the fuel mixture, except as necessary to start the engine.

STOPPING THE ENGINE

CAUTION

Remove the key to prevent accidental starting and battery discharge if equipment is left unattended.

Move the throttle lever to the "SLOW" position and allow the engine to idle for a short time before stopping. Then turn the key to the "OFF" position. Remove key from ignition switch.

TRACTOR BREAK-IN PROCEDURE

CAUTION

Never operate a new engine immediately under full load. Break it in carefully as shown in the table below.

Period	Engine Throttle Control Lever Position			Load
	½	¾	Full	
1st hour		X		None
2 hour	X		X	Light drawbar load or Mowing with tractor at slow speed
3rd through 13th hour		X	X	Medium drawbar load or Normal mowing

COLD WEATHER STARTING

WARNING

During operation do not run the engine in confined area such as storage building any longer than is necessary. Immediately move the tractor outside into the air.

WARNING

Operator must be seated before starting the tractor.

NOTE

In cold weather the starting motor may disengage prematurely. This is caused by the engine firing once but failing to continue running. If this happens several times, the engine will be flooded and it will be necessary to leave the throttle in the "SLOW" position but push the choke in all the way; then turn the ignition key to the "START" position and slowly pull the choke out to the position which will cause the engine to start and continue running. If the engine falters after putting tractor into motion, pull the choke out part way until the engine runs smoothly, then gradually push the choke back in as the engine warms.

Engine starting is possible in cold weather providing the correct weight of engine oil is used, the battery is fully charged, and the proper starting procedure is followed. The best procedure for starting at temperatures near or below freezing are as follows:

1. Operator must be seated.
2. Pull the choke all the way out into the full choke position.
3. Move the throttle lever midway between the "SLOW" and "FAST" position.
4. Place the PTO switch in the "OFF" position.
5. Place the speed control lever in neutral ("N").
6. Fully depress the brake pedal.
7. Move the key switch into the "START" position and hold until the engine starts; however, do not operate the starter for more than 10 seconds at any one time. As soon as the engine starts, slowly push the choke in part way.

DRIVING THE TRACTOR

CAUTION

Avoid sudden starts, excessive speed, and sudden stops.

CAUTION

Do not leave the seat of the tractor without disengaging the PTO, depressing the brake pedal and engaging the brake lock. If leaving the tractor unattended, also turn the ignition key off and remove the key.

NOTE

When using power take-off operated equipment, best performance is achieved with the throttle lever in the "FAST" position.

1. Depress the brake pedal to release the brake lock, and let the pedal up. Move the throttle lever to the position where the engine operates best for the load to be handled.
2. Start the tractor in motion by moving the speed control lever slowly forward or rearward to desired speed.

DRIVING ON SLOPES

(Refer to "SLOPE GAUGE" on page 39 in order to help determine slopes where you may not operate safely.)

WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A tractor could overturn and cause serious injury.

WARNING

Operate tractor up and down slopes, never across slopes.

CAUTION

Always drive up or down the face of a slope. Do not drive so that the tractor may tip over sideways.

Before operating the tractor on any slope, walk the slope to look for possible hazards such as rocks, mounds, ruts, stumps or other surface irregularities which could cause an upset.

Back the tractor with implement up the steepest portion of each slope you intend to work. If the tractor cannot negotiate the slope in reverse, the slope is too steep to be worked.

Avoid turns when driving on a slope. If a turn must be made, turn down the slope. Turning up a slope greatly increases the chance of a roll over.

Avoid stopping when driving up a slope. If it is necessary to stop while driving up a slope, start up smoothly and carefully to reduce the possibility of flipping the tractor over backward.

STOPPING THE TRACTOR

CAUTION

Always engage brake lock, lower equipment and shut off engine before dismounting. Never try to start engine from ground.

Fully depress the brake pedal. When the tractor has stopped, make sure the speed control lever is in the neutral ("N") position. Before dismounting always disengage the PTO, engage the brake lock and turn the ignition "OFF."

DRAWBAR

Drawbar equipment must be hitched to the tractor only at the hitch hole in the drawbar. (See Figure 21.)

OPERATING THE FRONT POWER TAKE-OFF (PTO) CLUTCH

NOTE

Be certain to follow break-in instructions listed below.

1. Move the throttle lever back to the medium or "SLOW" position.
2. Flip the toggle switch to the "RUN" position. (See Figure 22.)
3. Advance throttle to operating speed (full speed).
4. The operator must remain in tractor seat at all times. If operator should leave tractor seat without turning off the power take-off switch, the PTO will automatically disengage.
5. PTO switch must be in the "OFF" (A) position when shifting the tractor into reverse or the PTO will shut off automatically. To re-engage the PTO, shift unit into neutral. Move PTO switch to "OFF" (A) position. Then pull knob out and lift up to "START" (B) position and release.

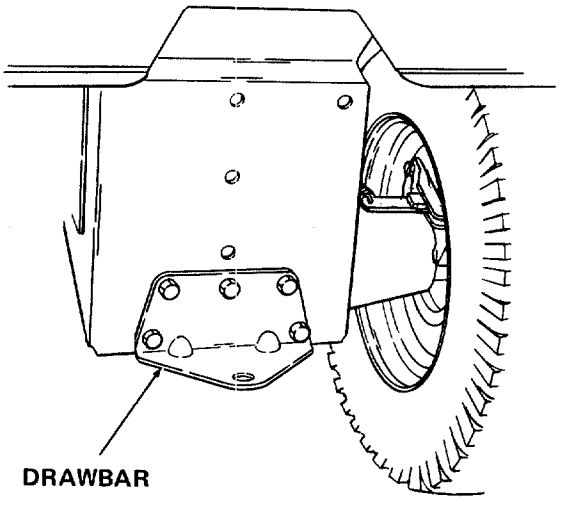


Figure 21

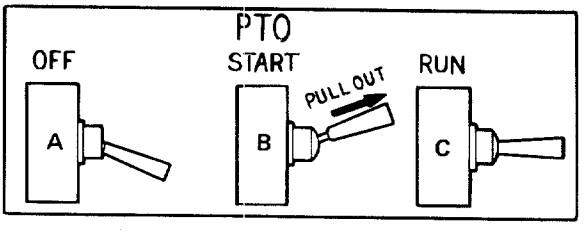


Figure 22

FRONT PTO CLUTCH BREAK-IN PROCEDURE

To break in the components and increase the life of the clutch assembly, proceed as follows.

1. Attach mowing deck, snow thrower, etc. to the tractor.
2. Adjust the belt tension as recommended in attachment owner's manual.
3. Engage and disengage the PTO ten to fifteen times without any load (not cutting grass, not blowing snow, etc.).

SECTION III. ADJUSTMENTS

ADJUSTING THE SEAT

WARNING

Do not adjust the seat when the tractor is moving. Adjusting the seat while the tractor is moving could cause the operator to lose control of the tractor.

Before starting the tractor, adjust the seat forward or rearward to the most comfortable driving position. To reposition the seat, move the seat adjustment lever (Figure 23) to the left and slide the seat forward or rearward. Release the adjustment lever when seat is comfortably positioned. Gently rock the seat forward and rearward once to be sure seat is locked in place.

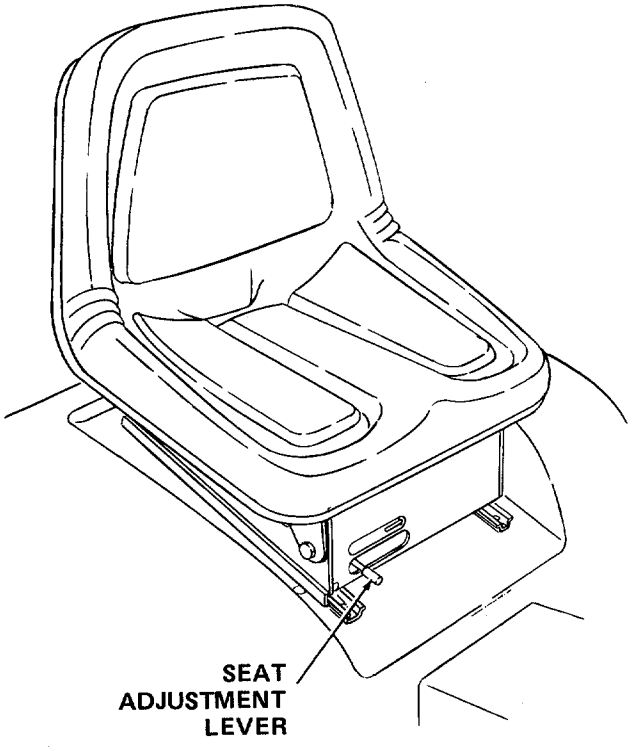


Figure 23

ADJUSTING THE STEERING WHEEL

WARNING

Do not adjust the steering wheel when the tractor is moving. Adjusting the steering wheel while the tractor is moving could cause the operator to lose control of the tractor.

Before starting the tractor, adjust the steering wheel forward or rearward to the most comfortable position. To position the steering wheel, push the tilt wheel release lever down (as shown in Figure 24) and move the steering wheel forward or rearward. Release the lever when the steering wheel is comfortably positioned. Gently push the steering wheel forward and rearward once to be sure wheel is locked in place. Make sure tilt wheel release lever is all the way up as shown in Figure 25.

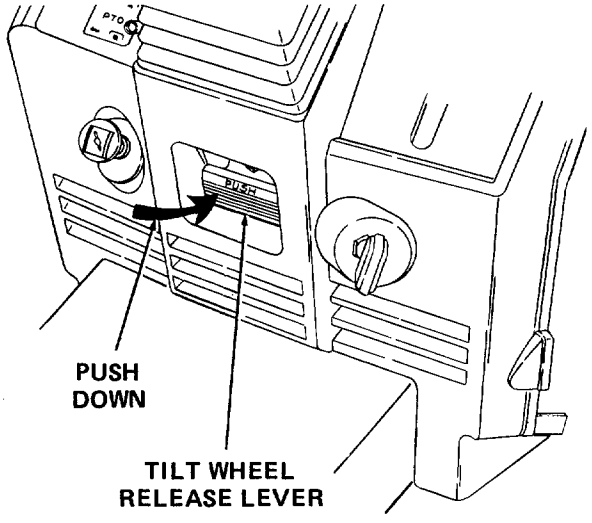


Figure 24

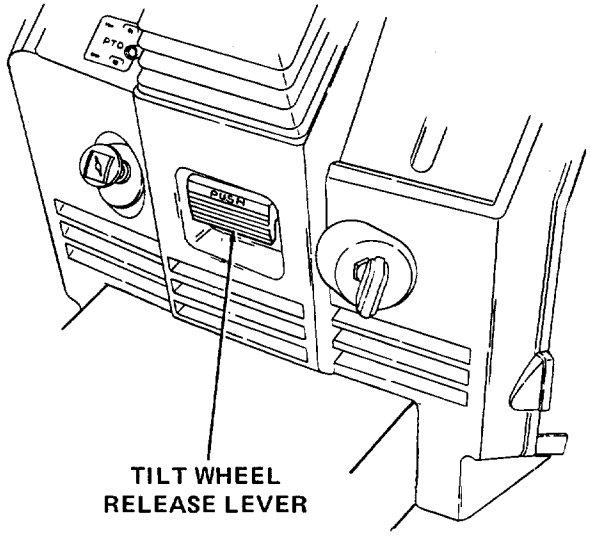


Figure 25

ADJUSTING THE POWER TAKE-OFF CLUTCH

WARNING

To avoid possible injury, move speed control lever into neutral, engage the brake lock and turn the ignition "OFF" before working on the machine.

WARNING

The clutch may be hot. Allow the engine and clutch to cool before adjusting the clutch.

The clutch is factory adjusted and should not require further adjustment under normal operating conditions. However, if the clutch fails to operate properly, check as follows:

Using a feeler gauge, check the air gap. (See Figure 26.) Insert feeler gauge into one of three access slots located around the outside of the brake plate. The air gap should be .017 inch. Adjust the self-locking nuts to obtain the proper clearance. Repeat the operation in all three access slots.

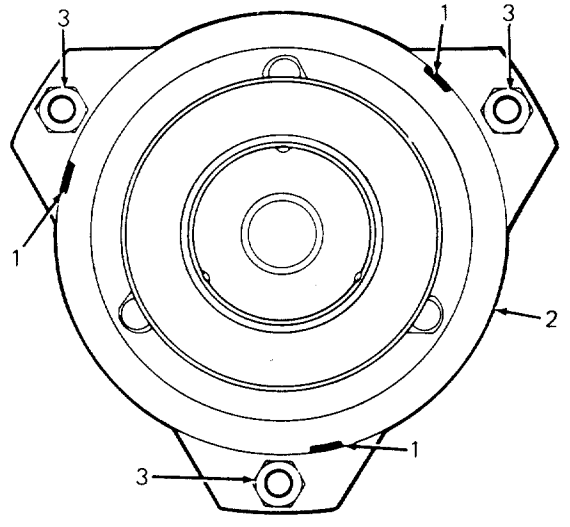


Figure 26

1. **Access Slots**
2. **Brake Plate**
3. **Self-Locking Nuts**

ADJUSTING THE BRAKES

Brake adjustment

During normal operation on this machine, the brakes are subject to wear and will require periodic examination and adjustment.

Brake adjustment check

1. To check brake adjustment, place a 1 inch thick wood block between the brake pedal and the brake lock tab (see Figure 27).
2. With the 1 inch thick wood block installed, the brake disc pads should be applying a light amount of friction against the brake disc rotor. If they are not, the brakes need adjustment.

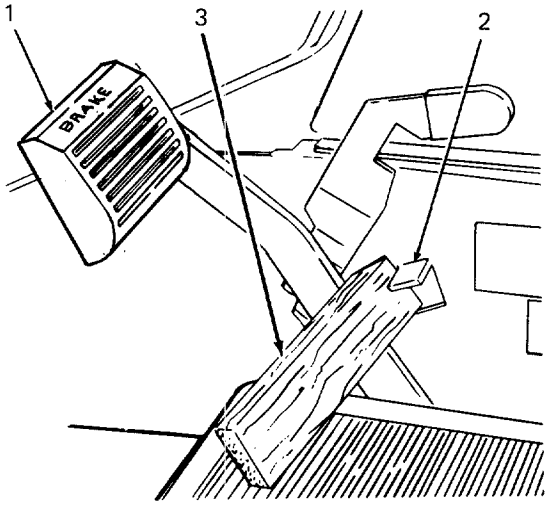
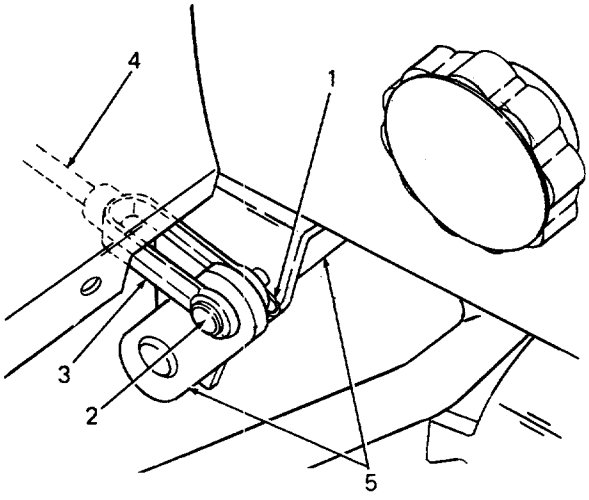


Figure 27

1. **Brake Pedal**
2. **Brake Lock Tab**
3. **1 Inch Thick Wood Block**

With the brake pedal disengaged, remove the clevis pinned end of one of the brake rod assemblies from the jackshaft assembly by removing the cotter pin from the clevis pin. (See Figure 28.)



(RUNNING BOARD REMOVED FOR CLARITY)

Figure 28

1. **Cotter Pin**
2. **Clevis Pin**
3. **Clevis**
4. **Brake Rod Assembly**
5. **Jackshaft Assembly**

Thread the clevis onto the brake rod one turn. Reconnect the clevis to the jackshaft assembly. There should be a minimum amount of clearance (no drag) between the brake pads and the rotor. If not, repeat adjustment as necessary. (See Figure 29.)

NOTE

Figure 29 is shown with the wheel and fender assembly removed for clarity.

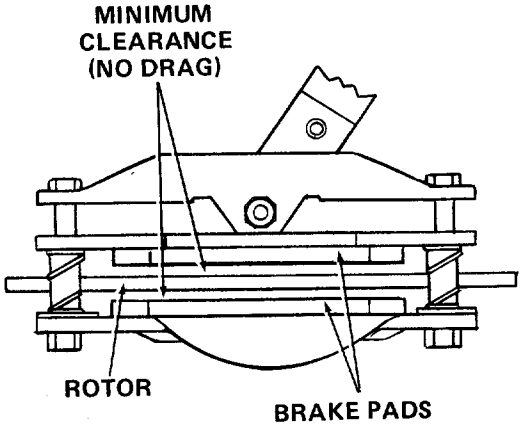


Figure 29

Repeat the adjustment on the brake rod assembly on the other side of the tractor.

Recheck brake adjustment per **Brake adjustment check** and ensure proper brake operation before operating the tractor.

WHEEL ALIGNMENT

The front wheels should toe-in approximately 1/8 inch.

Measure the distances A and B on the front wheels. (See Figure 30.)

NOTE

Dimension B should be approximately 1/8 inch less than dimension A.

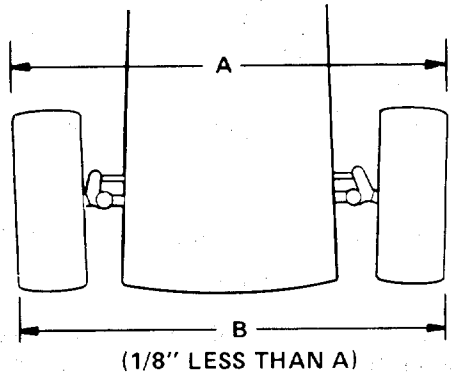


Figure 30

FRONT WHEEL ADJUSTMENTS.

To adjust the toe-in remove one ball joint, loosen the lock nut "C" at the ball joint and turn the tie rod ball joint in or out as required.

TURNING RADIUS

The front wheels should have an equal angle for left and right turns. If adjustment is necessary, remove ball joint and loosen lock nut "D," turn the drag link ball joint clockwise or counterclockwise as required. (See Figure 31.)

CAUTION

Be sure all parts are reassembled tight with cotter pins in place and spread.

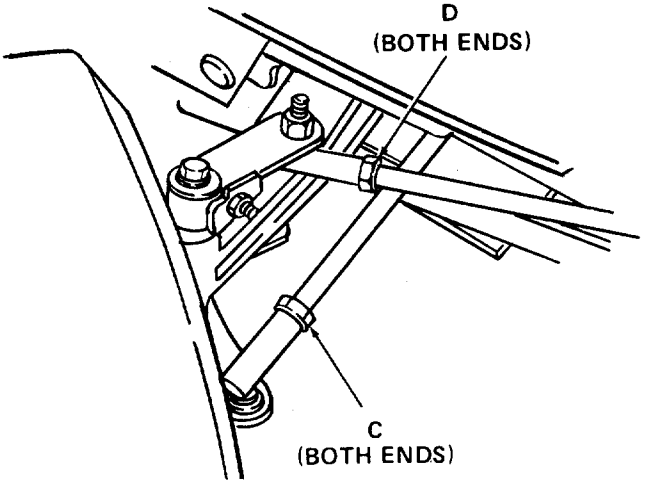


Figure 31. Tie Rod and Drag Link Ball Joints

PIVOT BAR ADJUSTMENT BOLTS

CAUTION

The tractor must be checked every 50 hours of tractor operation for play between the front axle and the pivot bar adjustment bolts. Both adjustment bolt heads must fit against the front axle. If play is discovered, the pivot bar adjustment bolts must be adjusted.

If play is discovered between the front axle and the pivot bar adjustment bolt heads, adjust both bolts as follows: (See Figure 32.)

1. Loosen jam nut 3 to 4 turns or as required.

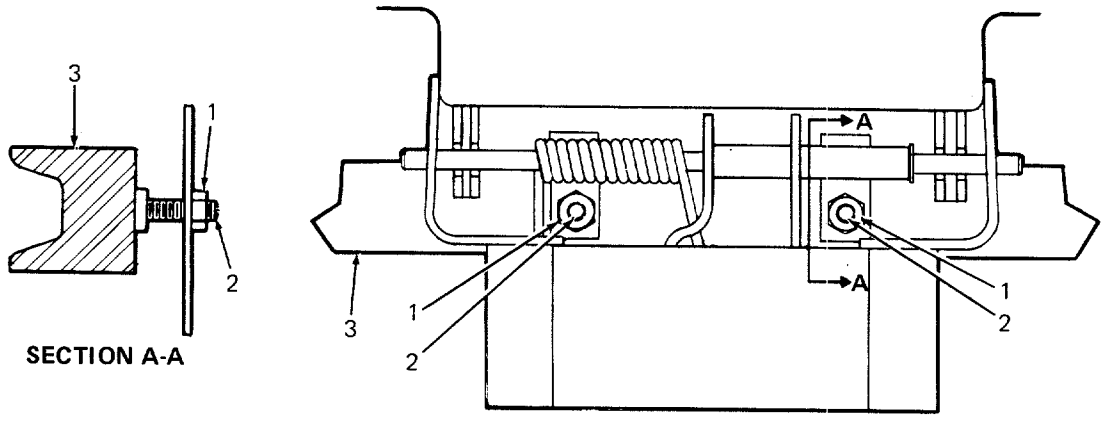


Figure 32

1. **Jam Nut**
2. **Pivot Bar Adjustment Bolts**
3. **Front Axle**

2. Turn pivot bar adjustment bolt counterclockwise until it hits against the front axle.
3. Tighten jam nut.
4. Repeat the above steps for the other pivot bar adjustment bolt.

CARBURETOR ADJUSTMENTS

WARNING

If any adjustments are made to the engine while the engine is running (e.g., carburetor), disengage all clutches and blades. Keep clear of all moving parts and be careful of heated surfaces and muffler.

WARNING

To avoid injury or an accident, engage brake lock, place speed control lever in neutral, and make sure equipment is disengaged before starting engine to make carburetor adjustments.

WARNING

Carbon monoxide fumes can be fatal! Do not make any adjustments to the carburetor in a confined area such as a storage building. Move the tractor outside into the air.

NOTE

The tractor covered in this manual is equipped with an adjustable carburetor.

The carburetor is adjusted at the factory and under normal operating conditions it will not require readjusting. However, if the engine does not operate properly, what may appear to be a faulty carburetor adjustment is in many cases a clogged air filter. This possibility should be ruled out before attempting to readjust carburetor. Refer to **"MAINTENANCE"** section in this manual.

To prevent possible damage to the carburetor needles, be very careful closing the carburetor needles before basic adjustments are made. Improper adjustment of the carburetor may result in engine damage.

PRELIMINARY SETTINGS (See Figure 33.)
Turn both adjusting needles **out** (counterclockwise) from the closed position, **1-3/8 turns.** Start the engine and run at half throttle for five to ten minutes to warm up.

NOTE

The engine must be warm before making final settings.

HIGH IDLE FUEL NEEDLE SETTING
Place the throttle into the "FAST" position. Turn the high idle fuel adjusting needle **out** (counterclockwise) from the preliminary setting until the engine speed decreases (rich). Note the position of the needle.

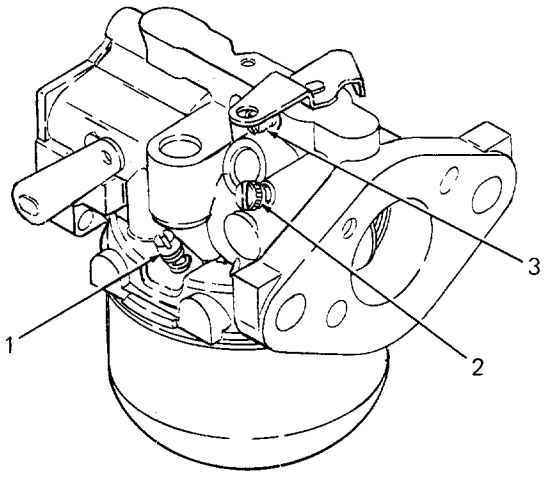


Figure 33. Carburetor

1. **High Idle Fuel Needle**
2. **Low Idle Fuel Needle**
3. **Low Idle Speed**

Now turn the adjusting needle **in** (clockwise). The engine speed may increase, then it will decrease as the needle is turned in (lean). Note the position of the needle.

Set the adjusting needle **midway** between the rich and lean settings.

LOW IDLE SPEED SETTING

Place the throttle control into the "IDLE" or "SLOW" position. Set the idle speed to **1200 RPM** (±75 RPM) by turning the low idle speed adjusting screw in or out.

LOW IDLE FUEL NEEDLE SETTING

Place the throttle into the "IDLE" or "SLOW" position. Turn the low idle fuel adjusting needle **out** (counter-clockwise) from the preliminary setting until the engine speed decreases (rich). Note the position of the needle.

Now turn the adjusting needle **in** (clockwise). The engine speed may increase, then it will decrease as the needle is turned in (lean). Note the position of the needle.

Set the adjusting needle **midway** between the rich and lean settings.

SECTION IV. MAINTENANCE

ENGINE OIL

The engine crankcase is filled with ship-away oil. This oil may be used for the first 5 hours of engine operation at temperatures between 0° and 90°F. If temperatures are not within this range, drain the oil from the oil filter and crankcase and replace with new oil as specified in the **"LUBRICATION TABLE."**

To aid starting, the selection of crankcase lubricating oils should be based on the lowest anticipated temperatures until the next drain period.

Cub Cadet Low Ash Engine Oil meeting API Service Classification SF or SG is recommended. For maximum engine life select API SF or SG oils with lowest levels of barium, calcium, or magnesium additives and minimum ash content (approximately 0.5%). Lubricant suppliers will normally furnish this information on their engine oils.

For oil change intervals of 50 hours the following oils are recommended.

32°F and above —	*Cub Cadet* Low Ash Engine Oil S.A.E. 30
0°F to 32°F —	*Cub Cadet* Low Ash Engine Oil S.A.E. 10W-30
Below 0°F —	S.A.E. 5W-20 or S.A.E. 5W-30

For other approved oils refer to **"LUBRICATION TABLE."**

NOTE

For temperatures above 32°F a multi-viscosity oil 10W-30 or 10W-40 can be used. **When either of these oils is used, the oil change interval increases to every 25 hours.**

Regularly check the oil level of the engine crankcase to see that it is filled to the correct level. Always keep the oil level between the "FULL" and the "LOW" marks on the dipstick. When checking the oil level, **engine must be cold,** the dipstick must be withdrawn and wiped clean, then inserted all the way and withdrawn for a true reading.

NOTE

Check the oil level only while the engine is stopped and tractor is level.

NOTE

During initial break-in period the engine oil level should be checked frequently.

FILLING THE CRANKCASE

To fill the crankcase with oil, place the tractor on a level surface. Clean the area around the oil fill tube and dipstick to prevent debris from entering the crankcase. Remove the oil fill cap and slowly pour 3 pints of oil into the crankcase. Replace the oil fill cap. The 15-HP engine is equipped with a remote oil filter; it is necessary to run the unit for approximately one minute to allow the oil to fill the filter and oil lines. After stopping the engine remove oil fill cap and add the remaining 8 ounces of oil, pouring slowly. (Engine oil capacity — 3 pints 8 ounces.) When checking the oil level, push the dipstick assembly firmly but slowly until cap bottoms on tube. DO NOT OVERFILL. Dipstick assembly MUST BE PUSHED FULLY INTO TUBE AT ALL TIMES WHEN ENGINE IS OPERATING.

NOTE

Never overfill the engine crankcase. Engine may overheat and/or damage may result if the crankcase is below the "LOW" mark or over the "FULL" mark.

OIL FILTER

The oil filter is located behind the right side panel and is mounted to the baffle. (See Figure 34.) The oil filter should be changed at every oil change interval.

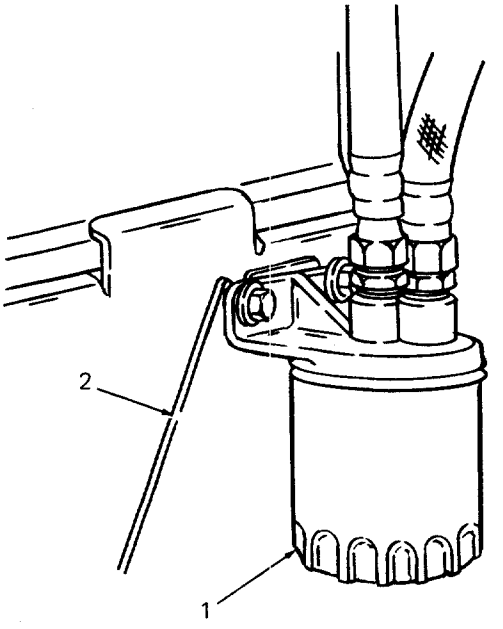


Figure 34

1. **Oil Filter**
2. **Baffle**

The filters can be obtained through your *Cub Cadet* dealer under Part Number KH-52-050-02; this is the only approved filter due to the pressure specifications required for the 15-HP engine.

To change the oil filter first remove the right side panel. Drain the oil from the engine by removing the drain plug. Before the filter is removed, clean the outside surface and mounting base of the filter. From the operator's position, turn the filter counterclockwise using an automotive type filter wrench to loosen.

Before installing the new filter, apply a coating of oil on the filter gasket. Thread the filter on by hand until tight enough to seat the gasket. Loosen the filter. Retighten the filter an additional one-half turn. Replace oil drain plug and follow "FILLING THE CRANKCASE" instructions. Check for oil leaks.

HYDROSTATIC DRIVE HYDRAULIC FLUID FILTER

NOTE

Clean the outside area before removing the filter to keep dirt from getting into the transmission case. If a mower is mounted on the tractor, the mower must be lowered to facilitate removal of the filter.

Remove the throw-away-can-type filter and replace with a new filter after the first 10 and 50 hours of operation, and every 100 hours of operation thereafter. The filters can be obtained through your *Cub Cadet* Dealer under part number 723-3014.

To remove the filter, turn the filter counterclockwise using an automotive-type filter wrench.

Before installing the new filter, apply a coating of oil on the filter gasket. Thread the new filter on by hand until tight enough to seat the gasket. Loosen the filter. Then turn it until the gasket contacts the base. Tighten the filter an additional 1/2 turn. Start engine and allow it to run for a few minutes. Shut engine off and check for leaks; check oil level in transmission case.

AIR CLEANER

Servicing Foam Pre-Cleaner Element

Clean and re-oil foam pre-cleaner element at 1-month intervals or every 10 hours, whichever occurs first.

NOTE

Service more often under dusty conditions.

1. Remove wing nut and cover. (See Figure 35.)
2. Remove foam pre-cleaner element by sliding it up off the paper cartridge.
   A. Wash pre-cleaner element in liquid detergent and water.
   B. Squeeze dry in cloth.
   C. Saturate in engine oil. Squeeze to distribute oil evenly.
   D. Wrap in shop towel and squeeze to remove excess oil.

Discard used element and replace with new one at least once a year.

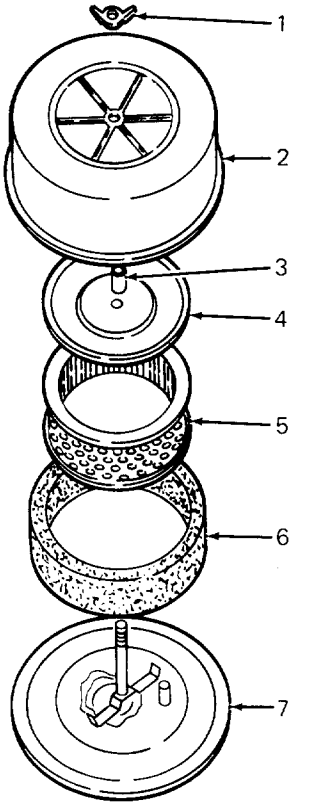


Figure 35. Air Cleaner Assembly

1. **Wing Nut**
2. **Cover**
3. **Rubber Tube**
4. **Cover Plate**
5. **Paper Cartridge**
6. **Foam Pre-Cleaner Element**
7. **Base Backplate**

SERVICING PAPER CARTRIDGE

This engine is equipped with a dry-type air cleaner element, which should be checked every 100 operating hours and replaced if dirty. It should be checked and if necessary replaced more often under extremely dirty, dusty conditions. Do not wash element in any

liquid or attempt to blow dirt off with air hose as this will puncture filter element. Carefully handle new element — do not use if gasket surfaces are bent or twisted. Check the following when installing a new element: (See Figure 35.)

1. Backplate must be flat on gasket of carburetor elbow. Replace backplate if bent or cracked.
2. Gasket surfaces of element must be flat against backplate and covered to seal effectively.
3. Seal on cover must be in place to reduce noise and vibration of the cover. Vibration can cause stud hole in cover to enlarge, thus permitting dirt to enter carburetor.
4. Wing nuts must be finger tight — do not overtighten.

Properly cleaned and installed air cleaner elements are the best guarantee to continued long and satisfactory engine life.

CLEANING ENGINE

This tractor has an air-cooled engine. Air must be able to circulate freely around the engine, shroud and over the fins of the cylinder head and cylinder block. Keep these areas free of accumulated dirt and trash or engine will overheat and result in damaged moving parts. Periodically clean the inside of the side panels and grille insert for adequate cooling.

NOTE

This machine is designed to cool properly with the engine side panels in place. Operating the machine without panels in place may result in inadequate cooling.

SPARK PLUGS

WARNING

To avoid possible injury, be sure engine is off and cool before making any adjustment or repairs.

NOTE

Remove all dirt from around the spark plugs before removing.

To remove spark plugs, always use a spark plug wrench. Check gap after every 100 hours of operation.

Replace a defective plug with a new plug. Set gap at .025 inch. (See Figure 36.) Tighten plug to 10-15 ft-lbs. See your authorized dealer for the correct replacement plug.

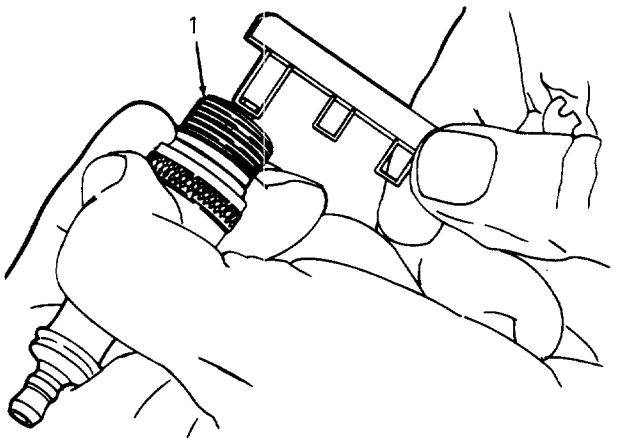


Figure 36

1. **Spark Plug**

CLEANING OF CYLINDER HEADS

Cleaning of the cylinder heads should only be done by your authorized *Cub Cadet* Dealer. This process is to be done to keep your engine properly cooled and at its peak efficiency. The frequency of cleaning is dependent upon the type of fuel used. When leaded fuel is used the cleaning interval is 250 hours, and with unleaded fuel the cleaning interval is 500 hours.

FUEL FILTER

WARNING

Do not replace fuel filter when engine is hot.

The engine is equipped with an inline fuel filter. Visually inspect the filter periodically. Replace dirty filter.

LIGHTS

Refer to **"SPECIFICATIONS"** when replacement of head lamp bulb or taillight bulb is necessary.

WARNING

Do not change head lamp bulbs when hot or when engine is hot.

CAUTION

Do not touch glass portion of head lamp bulb. Touching glass portion will reduce life of head lamp bulb.

To replace a head lamp bulb, refer to Figure 37 and remove the socket from the grille by rotating socket 1/4 turn. Pull old bulb assembly from socket and insert new bulb assembly. Place socket into grille and turn to lock in place.

To replace a taillight bulb, remove socket from the back of the taillight by rotating socket 1/4 turn. Remove old bulb from socket and install new bulb. Replace socket into taillight and turn to lock in place.

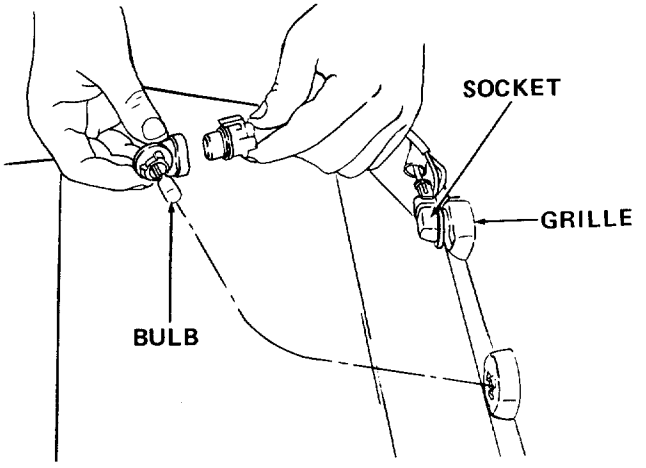


Figure 37

FUSE

Always use the same capacity fuse for replacement. Refer to **"SPECIFICATIONS."** If electrical system malfunctions, check the fuse.

To replace a new fuse, pull the old fuse from the fuse housing and install a new fuse. **(Refer to Figure 12.)**

BATTERY INFORMATION

WARNING

A. Battery acid must be handled with great care as contact with it can burn and blister the skin. It is also advisable to wear protective clothing (goggles, rubber gloves and apron) when working with it.*

B. Should battery acid accidentally splatter into the eyes or onto the face, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.

C. If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.

D. Since battery acid is corrosive, do not pour it into any sink or drain. Before discarding empty electrolyte containers, rinse them with a neutralizing solution.

E. NEVER connect or disconnect charger clips to battery while charger is turned on as it can cause sparks.

F. Keep all lighted materials (cigarettes, matches, lighters) away from the battery as the hydrogen gas generated during charging can be combustible.

G. As a further precaution, only charge the battery in a well-ventilated area.

***Always shield eyes and protect skin and clothing when working near batteries.**

DANGER

BATTERIES CONTAIN SULFURIC ACID AND MAY CONTAIN EXPLOSIVE GASES (when electrolyte has been added).

KEEP BATTERIES OUT OF THE REACH OF CHILDREN.

MAINTENANCE OF BATTERY

1. Check electrolyte level periodically (at least every two weeks). Keep the level to the split rings. Use only distilled water or a good quality drinking water. Never add acid or any other chemicals to the battery after initial activation.
2. The battery should be checked with a hydrometer after every 25 hours of operation. If the specific gravity is less than 1.225, the battery should be recharged. Maximum charge rate is 5 amps.
3. Coat the terminals and exposed wire with a thin coat of grease or petroleum jelly for longer service and protection against corrosion.
4. The battery should be kept clean. Any deposits of acid should be neutralized with baking soda and water. Be careful not to get this solution in the cells.
5. Avoid tipping the battery. Even a "sealed" battery will leak electrolyte when tipped.

STORAGE OF THE BATTERY

1. When storing battery for extended periods, disconnect battery cables. Removing battery from unit is recommended.

2. Keep the exterior of the battery clean, especially the top. A dirty battery must be stored with a full charge. A dirty battery will discharge itself.
3. Check the battery with a hydrometer. The battery must be stored with a full charge. A discharged battery will freeze.

Specific Gravity	Freezing Point
1.265	–71°F
1.250	–62°F
1.200	–16°F
1.150	5°F
1.100	16°F

NOTE

All batteries discharge during storage.

4. Recharge battery whenever the specific gravity is less than 1.225, before returning to service or every two months, whichever comes first.

COMMON CAUSES FOR BATTERY FAILURE

1. Overcharging
2. Undercharging
3. Lack of water
4. Loose hold downs and/or corroded connections
5. Excessive loads
6. Battery electrolyte substitutes
7. Freezing of electrolyte

NOTE

These failures do not constitute warranty.

BATTERY REMOVAL OR INSTALLATION

WARNING

When removing the battery, follow this order of disassembly to prevent your wrench from shorting against the frame.

Battery removal:

1. Remove the Negative cable.
2. Remove the Positive cable.

Battery installation:

1. Attach the Positive cable.
2. Attach the Negative cable.

JUMP STARTING

WARNING

Failure to use this starting procedure could cause sparking, and the gases in either battery could explode.

1. Attach the first jumper cable from the positive terminal of the good battery to the positive terminal of the dead battery.
2. Attach the second jumper cable from the negative terminal of the good battery to the FRAME OF THE UNIT WITH THE DEAD BATTERY.

TIRES

Keep the pneumatic tires properly inflated. Overinflation will cause operator discomfort. Underinflation will cause short tire life.

Inflate the front and rear tires for normal or heavy load operations as shown in the following table:

Tire Size	Pounds per Square Inch
Front Tires 16 x 6.50-8	12
Rear Tires 23 x 10.50-12	10

Always see that the tire valve caps are in place and tightened securely to prevent loss of air and protect the valve core and stem.

Do not overload the tractor tires by mounting equipment on the tractor which exceeds the load capacity of the size of the tires on the tractor.

MOUNTING TIRES ON THE RIM

After mounting a new or old tire on the rim, inflate it to 20 pounds pressure to seat the tire bead on the rim flange. Then deflate the tire to the correct operating pressure.

NOTE

After the first 10 hours of operation, check and retorque the wheel lug nuts (both sides) to 35 ft-lbs. to make sure they have seated properly.

SECTION V. OFF-SEASON STORAGE

If the machine is to be inoperative for a period longer than 30 days, the following procedures are recommended:

WARNING

Never store engine with fuel in tank indoors or in poorly ventilated enclosures, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, etc.

1. Remove all gasoline from fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine.

   Run engine until engine starts to falter, then use choke to continue engine operation until all fuel in tank and carburetor is exhausted. Remove fuel line at tank or carburetor and drain any remaining gasoline from system.

WARNING

Drain fuel into approved container outdoors, away from open flame.

Fuel left in engine during warm weather deteriorates and will cause serious starting problems.

2. Remove spark plugs and pour one (1) ounce of engine oil through spark plug hole into cylinder. Crank engine several times to distribute oil. Replace spark plugs.
3. Clean the engine and the entire tractor thoroughly.
4. Lubricate all lubrication points.
5. Follow battery storage instructions on page 26.
6. Protect tires and seat from sunlight. Inflate tires at regular intervals.

SECTION VI. MOWING

MOWING

WARNING

To avoid possible injury, do not allow anyone in the area opposite the discharge chute while mowing. Although the area has been supposedly cleared of foreign objects, small objects may be discharged by the mower.

WARNING

Never direct discharge of material toward bystanders or allow anyone near the machine while in operation.

For best results it is recommended that the first two laps should be cut with the discharge thrown towards the center. After the first two laps, reverse the direction to throw the discharge to the outside for the balance of cutting. This will give a better appearance to the lawn.

Do not cut the grass too short, as the mower will tend to scalp the grass. Short grass invites weed growth and yellows quickly in dry weather.

Mowing should be done with the engine at full throttle. Do not mow at high ground speed.

During certain times of the year and under some conditions, the mower may leave streaks of uncut material.

Streaking may occur when attempting to mow heavy weeds and tall grass. Under these conditions it may be necessary to go back over the cut area a second time to get a clean cut.

The following practices will help eliminate streaking:

1. Mow the area more often so the grass doesn't get too tall and heavy.
2. Operate the tractor at full throttle and lower forward speeds.
3. Keep the blades sharp and replace blades when worn.
4. Follow the mowing procedure shown in Figure 38.

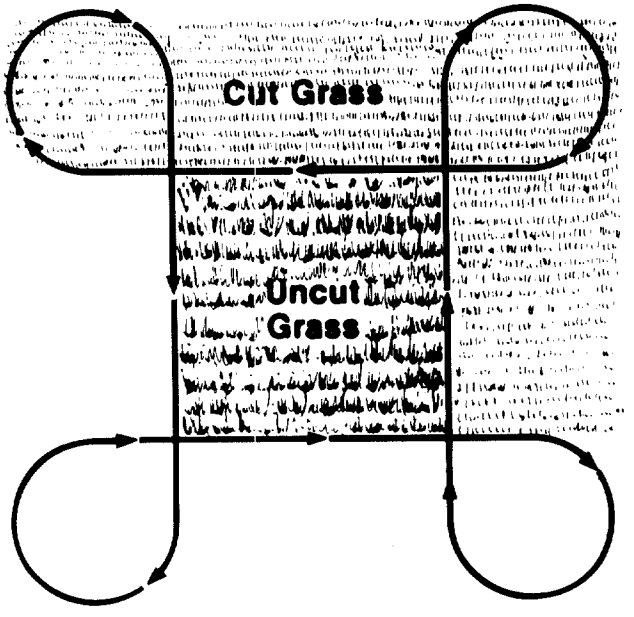


Figure 38

OPTIONAL EQUIPMENT AND ACCESSORIES

When you purchased your tractor, you probably had it completely equipped for your particular needs at the time. However, later you may wish to obtain optional equipment or accessories. These items and other allied equipment can be purchased from, and installed by, your authorized dealer.

The tractor is used for so many different types of work, and because it is called on to operate under so many different conditions, a variety of equipment is available to adapt it to the requirements of the user. Refer to equipment catalog.

MAINTENANCE CHART

Operation to be performed	Before each use	10 hours or once a month	30 hours three times a season	50 hours or twice a season	100 hours or yearly	Before storage
Clean grille insert, engine inlet air screen & side panels		More often under dirty conditions X				
Check engine oil level	X					
Fill fuel tank	X					
Cylinder head cleaning				Leaded fuel - 250 hrs. Unleaded fuel - 500 hrs.		
Change engine oil & oil filter	After first 5 hours			More often under dirty conditions X		
Check transmission oil level	X					
Replace transmis-sion oil & filter		After first 10 hours X		After first 50 hours X	Every 100 hours there-after	
Re-oil & clean foam air precleaner		X				
Check battery electrolyte level		X				
Grease front axle pivot bolt		X				
Lubricate steering knuckles (2) & steering arm		X				
Retorque rear wheel lug nuts		After first 10 hours X				
Lubricate brake shaft			X			
Clean cooling fins & external surfaces			X			
Service air cleaner paper cartridge					More often under dirty conditions	
Check spark plugs					X	X
Grease front wheel bearings			X			X
Drain fuel						X
Pivot bar adjustment bolts				X		

NOTE

Maintenance information for optional equipment may be found in the manual which is included with the specific piece of optional equipment.

TROUBLE SHOOTING

Possible Cause	Possible Remedy
HARD TO START	
No gasoline in fuel tank or carburetor	Fill the tank with gasoline; open the fuel shut-off valves. Check the fuel line, carburetor and fuel filter.
Fuel line or carburetor clogged	Clean the fuel line and carburetor with commercial carburetor cleaner.
Fuel filter plugged	Replace.
Water in gasoline	Drain the fuel tank and carburetor. Use new fuel and dry the spark plug.
Choked improperly. Flooded engine	Follow the starting instructions.
Defective ignition or loose wiring	Check the wiring, spark plug, or fuse.
Defective battery	Check and service. Refer to **"BATTERY."**
Spark plug dirty or improper gap	Clean, adjust the gap to .025-inch or replace the plug.
ENGINE OPERATES IRREGULARLY OR KNOCKS	
Engine incorrectly timed	*
Spark plug dirty; wrong gap or wrong type	Clean, reset the gap, or replace.
Poor or weak spark	Check the spark plug and wiring.*
Carburetor setting incorrect	Adjust. Refer to **"ADJUSTMENTS"***
Poor grade fuel or water in fuel	Drain and use a good grade of clean fuel.
Engine overheating	Refer to **"MAINTENANCE."**
Engine valves at fault	*
Engine smokes	Adjust the carburetor.*
Oil level rises due to gasoline in crankcase	Refer to "OPERATING IN COLD WEATHER."
Air filter becomes oil and fuel soaked	Refer to "OPERATING IN COLD WEATHER."
Engine leaks oil	Refer to "OPERATING IN COLD WEATHER."
Misfiring	Refer to "OPERATING IN COLD WEATHER."
Other engine problems	*
Excessive oil in air cleaner	Be sure that oil dipstick is fully seated and all excess oil is squeezed out of pre-cleaner foam element.

***See your authorized dealer.**

TROUBLE SHOOTING

Possible Cause	Possible Remedy
LACK OF POWER	
Air cleaner clogged	Service the air cleaner element. Refer to **"MAINTENANCE."**
Engine overload	Reduce the load.
Engine overheated	Make sure air intake screen, shrouding, engine fins, side panels and grille insert are free of accumulated dirt and trash. Refer to **"MAINTENANCE."**
Poor fuel, too rich, or too lean a mixture	Refer to **"ADJUSTMENTS."**
Fuel tank air vent clogged	Open the vent in the cap.
Air leakage between carburetor and engine	Remove air cleaner. Tighten the carburetor and manifold mounting nuts. Replace as indicated in **"MAINTENANCE."**
Incorrect timing or faulty ignition	*
Brake drags	Adjust the brake. Refer to **"ADJUSTMENTS."**
Clutch slipping	Adjust the free travel of the pedal. Refer to **"ADJUSTMENTS".**
ENGINE OVERHEATING	
Insufficient cool air, dirty air intake screen, shroud, cooling fins, side panels or grille insert	Keep the air intake area, side panels, grille insert and cooling fins clean; refer to **"MAINTENANCE."**
Lean carburetor adjustment	Readjust. Refer to **"ADJUSTMENTS."**
Oil level incorrect	Engine oil level must not be over the "FULL" mark or below the "LOW" mark. Refer to **"MAINTENANCE."**

***See your authorized dealer.**

LUBRICATION TABLE

Point of Lubrication	Check at Hours	Change at Hours	Capacity	Anticipated Air Temperature		
				Above +32°F	+32°F to 0°F	Below 0°F
Engine crankcase	Check before each use	50	3 pints 8 ounces (1-3/4 quarts)	*Cub Cadet* Low Ash Engine Oil SAE 30	*Cub Cadet* Low Ash Oil SAE 10W-40 or 10W-30	*Cub Cadet* Low Ash Engine Oil SAE 5W-20 or 5W-30
Hydro-drive unit mounted on transmission case with filter	Check before each use	Add as needed	Approx. 14 pints	*Cub Cadet* Hydraulic Transmission Fluid **NOTE**: *Cub Cadet* hydraulic transmission fluid meets IH B-6 specifications. If fluid is used that does not meet these requirements, *Cub Cadet* will not be responsible for substandard performance. Failures due to use of improper fluid are not covered by warranty. For maximum protection, use *Cub Cadet* Hydraulic Transmission Fluid.		
Steering knuckles & front axle pivot bolt	10			Use 251H EP grease or equivalent No. 2 multi-purpose lithium grease and apply two or three strokes or sufficient grease to flush out old grease and dirt.		
Front wheel bearings	30			Two or three strokes minimum of the lubricator using 251H EP grease or equivalent No. 2 multi-purpose lithium grease.		
Steering gear housing	100	or yearly	1/4 lb	Two strokes of the lubricator using 251H EP grease or equivalent No. 2 multi-purpose lithium grease.		
Alignment couplings				251H EP grease or equivalent No. 2 multi-purpose lithium grease.		

LUBRICATION GUIDE

WARNING

The life of any machine depends upon the care it is given. Proper lubrication is a very important part of that care.

Be certain that all lubrication fittings are assembled in place, using the lubrication illustrations as a guide.

Always lubricate the tractor thoroughly before taking it to the field. Use a pressure lubricating gun.

Be sure all fittings are free from dirt and paint so the lubricant is certain to enter the bearing.

Always force the lubricant through the full length of each bearing until it emerges at the end, carrying with it the worn lubricant and any dirt that may have entered the bearing.

Miscellaneous working parts not provided with lubrication fittings should be oiled daily with a good grade of lubricating oil.

Lubricant is cheap. Use plenty of it. Worn parts can be expensive to replace.

Keep your supply of lubricating oil and grease stored in clean containers, and covered to protect from dust and dirt.

Keep the lubricating gun nozzle clean and wipe dirt from grease fittings before lubricating.

The symbols in the illustration indicate the method of application and the hourly intervals to apply the lubricant.

Use a pressure lubricating gun and apply 251H EP grease (or equivalent No. 2 multi-purpose lithium grease) sufficient to flush out the old grease and dirt. Lubricate at hourly intervals indicated on symbols.

Dipstick, use to check engine oil before each use.

LUBRICATION GUIDE

—Before Each Use

1. Engine filler cap and dipstick — Check the oil (with the engine stopped) and add sufficient new oil to bring it to the **"FULL"** mark on the dipstick. Do not overfill. Do not operate the engine if the oil level is below the **"LOW"** mark on the dipstick.

—After Every 10 Hours of Operation

2. Steering knuckles (2) (Both sides) — Use 251H EP grease or equivalent No. 2 multi-purpose lithium grease and apply sufficient grease to flush out old grease and dirt.

3. Transmission oil filter — **NOTE:** After the first 10 hours only, remove the transmission oil filter and replace with a new filter. Refer to **"MAINTENANCE."** Change the transmission oil filter after 50 hours and every 100 hours of operation thereafter.

4. Front axle pivot bolt (Right side) — Use 251H EP grease or equivalent No. 2 multi-purpose lithium grease and apply sufficient grease to flush out old grease and dirt.

NOTE: It may be necessary to rotate the front axle to reach the grease fitting.

—After Every 30 Hours of Operation

5. Transmission oil level and fill tube — Check the oil with the engine stopped. Keep the lubricant up to **"FULL"** mark on dipstick.

NOTE: Transmission oil level and fill tube also services the following:

1. Hydrostatic transmission
2. Rear axle
3. Hydraulic lift system

6. Front wheel bearings — Two or three strokes minimum of the lubricator using 251H EP grease or equivalent No. 2 multi-purpose lithium grease.

—After Every 50 Hours of Operation

7. Engine oil drain plug and oil filter — While the engine oil is warm, remove the drain plug and oil filter, and drain all of the oil from the crankcase and oil filter lines. Replace the drain plug. Refer to **"MAINTENANCE," "FILLING THE CRANKCASE" & "OIL FILTER"** for proper oil filling procedure. Refer to **"LUBRICATION TABLE"** for the proper quantity and viscosity to use.

8. Transmission oil filter — **NOTE:** After the first 50 hours only, remove the transmission oil filter and replace with a new filter. Refer to **"MAINTENANCE."** Change the transmission oil filter every 100 hours of operation thereafter.

—Every 100 Hours of Operation

9. Transmission oil filter — Change the transmission oil filter and replace with a new filter. Refer to **"MAINTENANCE."**

Speed Control Linkage

10. Cam plates — Once a year, apply a small amount of 251H EP grease or equivalent No. 2 multi-purpose lithium grease in the slots.

11. Steering gear housing — Every 100 hours of yearly use 251H EP grease or equivalent No. 2 multi-purpose lithium grease. Apply two strokes with lubricator.

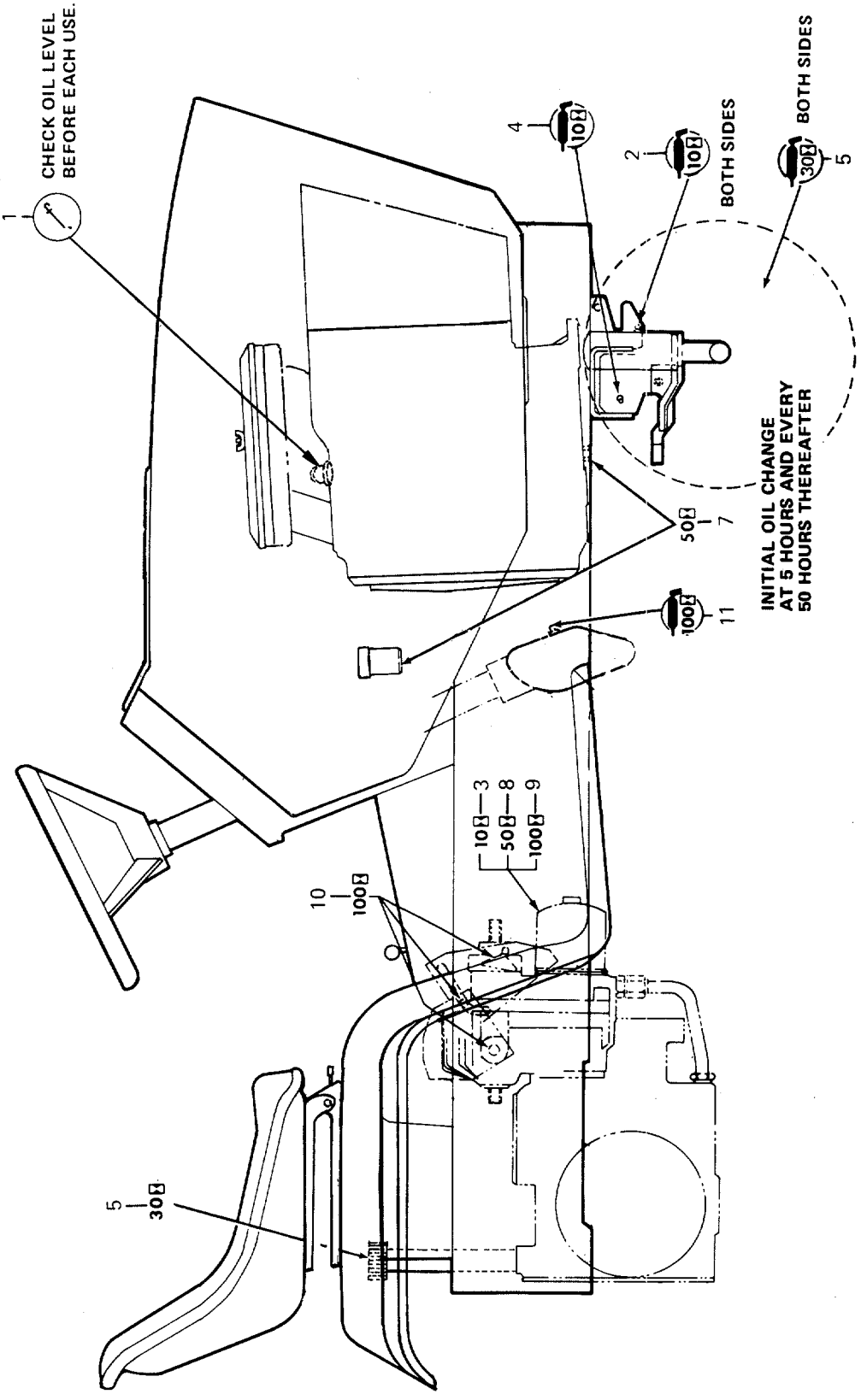
Miscellaneous

Brake pedal shaft — Lubricate the brake pedal shaft and linkage with eight or ten drops of engine oil.

Alignment couplings — Use 251H EP grease or equivalent No. 2 multi-purpose lithium grease.

NOTE

Lubrication information for optional equipment may be found in the manual which is included with the specific piece of optional equipment.


CHECK OIL LEVEL
BEFORE EACH USE.
1
4
10
2
10
BOTH SIDES
BOTH SIDES
5
30
INITIAL OIL CHANGE
AT 5 HOURS AND EVERY
50 HOURS THEREAFTER
50
7
11
100
10—3
50—8
100—9
10
100
5
30

SPECIFICATIONS

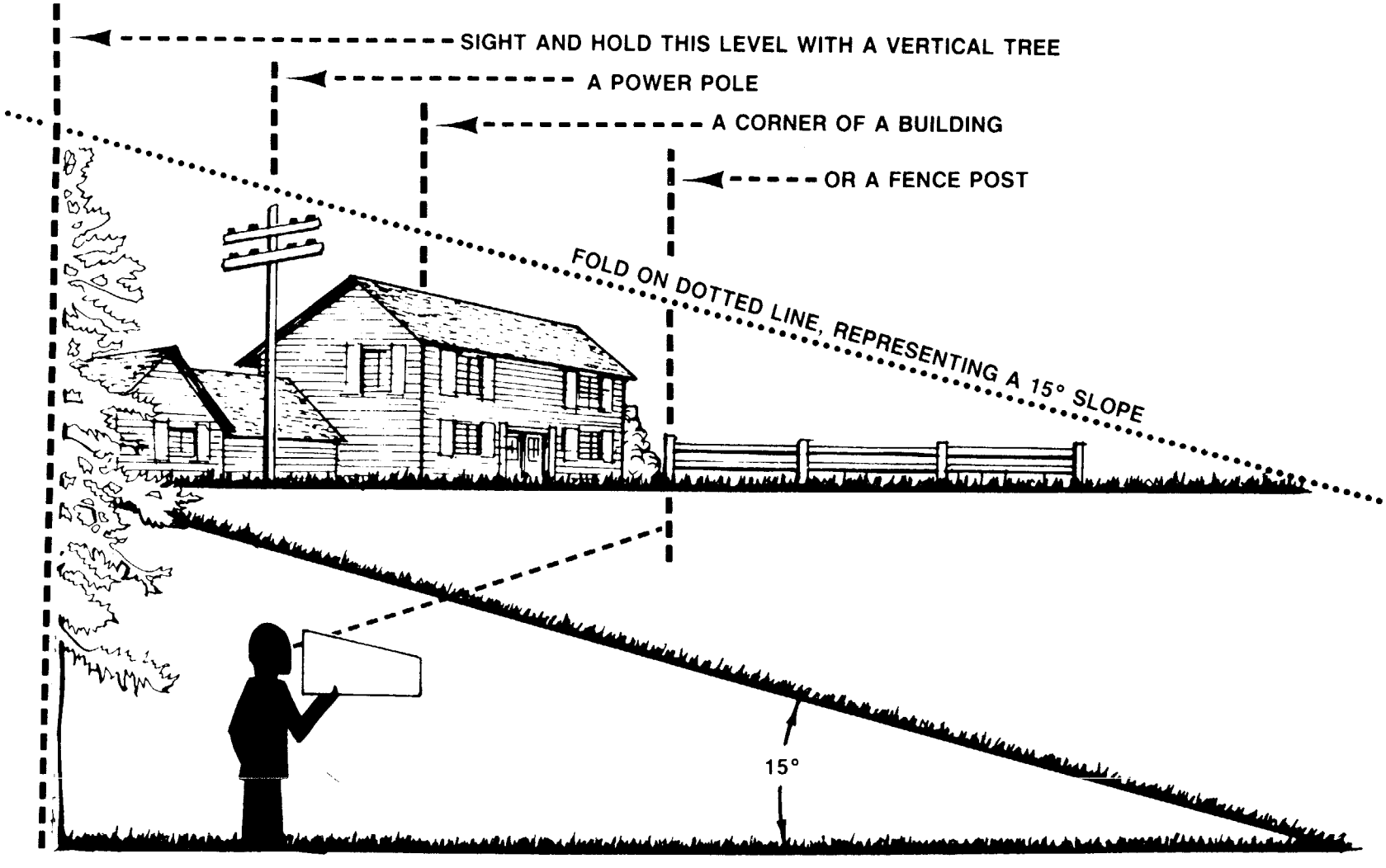
	1541
CAPACITIES	
Fuel tank	5 gallons
Crankcase	3 pints 8 oz.
Transmission case with hydro-drive unit mounted	7 qts.
Steering gear housing	1/4 lbs.
HYDROSTATIC DRIVE	
Speed: Forward	0 to 7.5 mph
Reverse	0 to 4 mph
ENGINE	
Make and model	Kohler
(electric starting)	15 HP
Cylinders	2
Bore	3.125 in.
Stroke	2.75 in.
Displacement (cubic inches)	42.18
Engine speed (governed)	
Low speed	1200 RPM
High idle speed	
(no load)	3600 RPM
(full load)	3350 RPM
Valve clearance (engine cold)	
Intake	.003-.006 in.
Exhaust	.011-.014 in.
Ignition	Battery
Spark plug gap (*Cub Cadet* No. 759-3334)	.025 in. gap.
ELECTRICAL SYSTEM	
System voltage	12 volt neg. ground
Battery	725-3174
Alternator	15 amp
Fuse (auto type)	20 amp
Head lamp bulb	725-3161
Taillight	Lamp No. 194
BRAKES	Dual disc, external
TIRE SIZES	
Front	16 x 6.50-8
Rear	23 x 10.50-12
DIMENSIONS	
Tread:	
Front with 16 x 6.50-8 tires	29.00 in.
Rear with 23 x 10.50-12 tires	27.00 in.
Wheelbase	45.5 in.
Length, over-all	72.00 in.
Width, over-all	37.75 in.
Height, over-all (to top of steering wheel)	44.00 in.
Ground clearance	6.00 in.
Turning radius	25.0 in.

Specifications are subject to change without notice.

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)

USE THIS SHEET AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.


SIGHT AND HOLD THIS LEVEL WITH A VERTICAL TREE
A POWER POLE
A CORNER OF A BUILDING
OR A FENCE POST
FOLD ON DOTTED LINE, REPRESENTING A 15° SLOPE
15°

WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2½ feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.
Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.